ANNUAL INDEX—JOURNAL OF CHEMICAL EDUCATION

Volume 9, 1932

The annual index for Volume 9 of the JOURNAL OF CHEMICAL EDUCATION is divided into two parts—an Author Index and a Subject Index, each alphabetically arranged. Letters (Ar), (Ab), (B), (C), (CN), (E), (F), (P), and (S) have been used after the various items to designate, respectively, article, abstract, book review, correspondence, contemporary news, editorial, frontispiece, portrait, and science news notes. In the Author Index titles of books reviewed have been set in italics. In the Subject Index names of the persons of whom portraits have appeared in Volume 9 of the JOURNAL have been set in italics.

AUTHOR INDEX

ABBOT, C. G. Solar radiation (Ar) 416
ADKINS, H. Comparison of chemical reactivity (Ar) 1865
ADVANI, G. D., D. D. KARVÉ AND—. *Model essays in organic chemistry* (B) .. 1312
AIKIN, W. M. A proposal for better coördination of school and college work (Ab) 1838
ALEXANDER, J. Some aspects of catalysis (Ar) 2026
ALEXANDER, L. T. AND H. G. BYERS. Hydrogen from iron and water at room temperature and a suggested lecture experiment (Ar) 916
ALLEN, E. T. Pen portrait of William Francis Hillebrand, 1853–1925 (Ar) ... 72
ALLEN, F. J. Further remarks on the determination of formulas (C) 557
ALLEN, N. A simple and convenient setup for potentiometric titrations (Ar) .. 1973
ALMQUIST, H. J. Use of the hydrogen-ion comparator in the titration of aqueous extracts (Ar) 926
AMMIDOWN, E. B. Methods of teaching chemistry (Ab) 1133
ANDERSON, E. The plant gums (Ar) 853
ANDERSON, H. V., J. S. LONG AND—. *Chemical calculations* (B) 968
ARCHIBALD, E. H. *The preparation of pure inorganic substances* (B) 966
ARENSON, S. B. *Chemical arithmetic* (B) .. 604
ARMSBY, S. P. Lime contributes to southwestern development (Ab) 1837
ARMSTRONG, E. The Edgar Fahs Smith Memorial Collection, University of Pennsylvania (Ar) 652
ARMSTRONG, E. F. Fat hydrogenation (Ab) 1128
Hydrogen in industry (Ab) 1303
— AND K. F. ARMSTRONG. *The glycosides* (B) 1137
ARMSTRONG, H. E. Coal, color, and constitution (Ab) 2144
ARNOLD, L. K. Chemical hazards in firefighting (Ar) 1523
Correspondence (C) 2129
— AND L. J. MURPHY. *Fighting fires which involve chemicals* (B) 200
ASHCROFT, E. W. *Faraday* (B) 968
ASTELL, L. A. An integrated project on copper, utilizing visual aids in various forms (Ab) 762
— AND C. W. ODELL. *High-school science clubs* (B) 1314
AUGHINBAUGH, B. A. The application of the motion picture to the problem of the rising cost of education (Ab) 161
AVENS, A. W. AND M. J. MURRAY. The detection of strontium in the presence of calcium (Ar) 522

BABOR, J. A., W. L. ESTABROOKE, AND A. LEHRMAN. *Elements of general chemistry* (B) 192
Laboratory manual in elements of general chemistry (B) 192
BADEREN, E. Lecture experiment for the demonstration of the energy of canal rays (Ab) 156
BAEKELAND, L. H. Dreams and realities (Ar) 1000
BAINBRIDGE, K. T. The isotopes of lithium, sodium, and potassium (Ab) 1130
BAINES, H. Practical sensitometry (Ab). 1128
BAKER, C. P. AND W. C. WHITE. Chemical engineering on the coöperative plan at Northeastern University (Ar) 894
BAKER, H. W. AND L. I. PHARES. A chemistry exhibit (Ar) 501
BAKER, R. A. Laboratory instruction in glass blowing (Ar) 203
BALLS, A. K. Recent advances in enzyme chemistry. The mechanism of peptide hydrolysis (Ab) 163
BAMBERGER, S. B. The demonstration of artificial resins (Ab) 565
BARGHEER, W. The quantitative determination of hydroxyl groups in bases (Ab) 1835
BARNSTORF, H. The treatment of hydrogen-ion concentrations for instructional purposes in high schools (Ab) .. 565
BARRETT, W. H. New indicators for volumetric analysis (Ab) 1490
BASS, L. W., P. A. LEVENE AND—. *Nucleic acids* (B) 198
BATCHELDER, G. W. AND L. C. HURD. Silver-bismuth alloys in quantitative analysis (Ar) 929
BATES, H. C., J. H. LITTLETON, JR. AND—. Heat transfer through industrial glass tubing (Ab) 1663
BATES, J. R. Molecular fragments and oxidation processes (Ar) 1219
BECKER, J. Beryllium as a new industrial metal (Ab) 568
BECKET, F. M. High-chromium steels in the chemical industry (Ab) 947
BELL, J. Lavoisier, Priestley, and Black (Ab) 2140
BENNETT, G. W. A laboratory experiment based on the Freundlich surface activity equation (Ar) 517
BERNARD, H. Alexander Borodin: chemist and musician (C) 153
BERNS, M. A. Exhibit available on manufacture of portland cement (C) 1486
BEROLZHEIMER, D. D., C. J. WEST AND—. *Bibliography of bibliographies on chemistry and chemical technology. Second supplement, 1929–31* (B) 970
BESSMERTNY, B. Hermann Kopp as a chemist (Ab) 2139
BEUMELBURG, L., H. RHEINBOLDT AND—. The demonstration of the Solvay-soda process in the classroom (Ab) 1832
BIETZ, J. R. An experiment with true-false tests (Ab) 763
BIJVOET, J. M. Prof. Dr. Andreas Smits (Ab) 165

BILLINGER, R. D. Quantitative experiments in elementary chemistry. II. A measure of catalysis (Ar) 144

BINGHAM, E. C. On designing materials with specific rheological properties (Ab) 569
Rheology subject index (Ab) 370

BLANK, E. W. A demonstration experiment on the diffusion of metals (Ar) .. 317
Device for the simultaneous observation of melting point and temperature (Ar) 1975
Experiments in allotropy. I. Arsenic and iron allotropes (Ab) 1999
Experiments in microscopy. Demonstrating Brownian movement and Cottrell precipitation (Ab) 2133
Modified technic for first group separation. Removal of large amounts of mercurous chloride by sublimation (Ar) 527

— AND M. L. WILLARD. Micro-molecular-weight determination by vapor-density methods (Ar) 1819

BLESS, A. A. The aims of a college course in science (Ar) 889

BLOOD-RYAN, H. W. Michael Faraday, the man (Ab) 164

BLUM, W. The status of chromium plating (Ab) 1130

BOLAM, T. R. *The Donnan equilibria and their application to chemical, physiological, and technical processes* (B) 1669

BOORD, C. E., W. R. BRODE AND—. Molecular models in the elementary organic laboratory. I (Ar) 1774

BORROWMAN, G. Base exchange water softening in the Chicago district (Ab) . 569

BOSE, C. W. Teaching the more intelligent pupil (Ab) 1133

BOTHE, W. Experiments with cosmic rays (Ab) 1491

BÖTTGER, W., *editor*. *Die chemische Analyse, XXX Band* by O. LIESCHE (B) .. 1310

BOYD, W. J. AND W. ROBSON. A modified absorption tube for the determination of hydrogen in organic substances by the micro-analytical method of Pregl (Ab) 367

BRADBURY, G. M. AND M. V. MCGILL. *The twentieth century practice-exercises and objective tests in chemistry* (B) 194

BRADBURY, G. M., M. V. MCGILL AND—. *Chemistry workbook and laboratory guide* (B) 193

BRAGG, W. Michael Faraday (Ab) 571

BRAKELEY, G. A. Tuition and cost of education (Ab) 368

BRAY, W. C. AND W. M. LATIMER. *A course in general chemistry including an introduction to qualitative analysis* (B) . 1496

BRAY, W. J. A study of the achievements of students of general chemistry in college (Ab) 2142

BREEDIS, C. A simple device for holding ultra-filtration membranes (Ab) 755

BRENNAN, J. Distinction between viscose and cuprammonium rayon (Ab) 570

BRIGGS, D. B. *Chemical change* (B) 786

BRIGHTON, T. B. Salt-making on the Great Salt Lake (Ar) 407

BRINKLEY, S. R. *Introductory general chemistry* (B) 1494

BRITTON, H. T. S. *Hydrogen ions* (B) 1669

BROCKMAN, C. J. *Electrochemistry. Principles and Practice* (B) 603

BRODE, W. R. AND C. E. BOORD. Molecular models in the elementary organic laboratory. I (Ar) 1774

BROWN, D. Kem: An instructive chemistry card game (Ab) 2142

BROWN, E. H. An apparatus for maximum or minimum boiling-point study (Ar) 1114

BROWN, F. E. *A short course in qualitative analysis* (B) 1666

— AND R. R. COONS. Effects of different instructors for recitation and laboratory in freshman chemistry (Ar) .. 1949

BROWNE, C. A. An early experiment of James Woodhouse upon the synthetic production of ammonia (Ar) 1744
The history of chemical education in America between the years 1820 and 1870 (Ar) 696

BUCKWALTER, T. V. Selecting the materials for the Timken locomotive (Ab) 1491

BUGGE, G. Some problems relating to history of science and technology (Ar) ... 1567

BYERS, H. G., L. T. ALEXANDER AND—. Hydrogen from iron and water at room temperature and a suggested lecture experiment (Ar) 916

CALCOTT, W. S. AND T. R. OLIVE. Choosing and using materials for chemical plant construction (Ab) 2135

CALDWELL, B. P. Industrial coöperation in education of chemists (Ar) 1435

CALDWELL, W. E. Usable analogies in teaching fundamentals of chemical equilibrium (Ar) 2079

CALEY, E. R. *Analytical factors and their logarithms* (B) 967

CAMPBELL, H. G. Where are we going in our high schools? (Ab) 1307

CARD, J. H. The teaching of chemistry in the high school (Ab) 1132

CARMICHAEL, P. A. Cotton stalks, a new source of rayon (Ab) 369

CARMODY, W. R. Another experiment in second-year college chemistry (Ar) 1244

CAROTHERS AND HILL. Giant molecules and synthetic silk (Ab) 570

CARTER, J. D. The value of silicate of soda as a detergent (Ab) 759

CASPE, S. The adsorption isotherm? (Ar) . 907

CAVELTI, J. E. The modern theory of acids and bases (Ab) 760

CHAMBERLAIN, J. S. A chemist at Oxford (Ab) 1134

CHANDLER, A. C. Goethe and science (Ab) 1131

CHARLESWORTH, M. E. AND E. M. PATCH. Heat of reaction (Ab) 1490

CHEMNITIUS, F. *Die Chemie in Jena von Rolfinck bis Knorr (1629–1921)* (B) 969

CLARK, A. J. Carbon compounds in general chemistry (Ar) 99

CLARK, A. R. Balancing chemical equations (C) 360

CLARKE, B. L. *Marvels of modern chemistry* (B) 2145

CLAYTON, W. The preparation of emulsions (Ab) 946, 1129

CLEMMER, J. B., W. H. COGHILL AND—. Soap flotation of the non-sulfides (Ab) 1130

CLEVENGER, A. W. AND C. W. ODELL. *High-school libraries in Illinois* (B) 200

CLIPCORN, L. V. AND W. S. THOMPSON. A convenient mercury measuring device (Ab) 1660

COCKCROFT, J. D., P. KAPITZA AND—. Hydrogen liquefaction plant at the Royal Society Mond Laboratory (Ab) 948

COFMAN, V. European scientists study neutron (Ab) 1490
Ultra-violet light changes carrot pigments into vitamin A (Ab) 1835

COGHILL, W. H. AND J. B. CLEMMER. Soap flotation of the non-sulfides (Ab) 1130

COLLINS, A. F. *How to understand chemistry* (B) 1496

COMPTON, A. H. What science really is (Ab) 573

COMPTON, K. T. The future of engineering (Ab) 763

COOL, R. D. A small laboratory for chemical microscopy (Ar) 2084

COOLEY, H. B. Milling salt in Texas (Ab) 1836

COONE, B. Improvised beaker holder (Ab) 755

COONS, R. R., F. E. BROWN AND—. Effects of different instructors for recitation and laboratory in freshman chemistry (Ar) 1949

CORROTT, D. M. Lactose: its properties and uses (Ab) 759
CORTELYOU, W. P. In defense of titres (C) 1297
COUNTS, G. S. Dare progressive education be progressive? (Ab) 1308
CREMER, H. W. Developments in chemical engineering (Ab) 758
CROWTHER, J. G. And now the neutron (Ab) 1835
CULBERTSON, J. B. Department of chemistry at Cornell College remodeled (CN) 578
CURTIS, F. D. The teaching of science in secondary schools (Ab) 1306
CURTIS, F. J. Education for commercial research (Ar) 55
CURTIS, H. A. Present-day knowledge of coal (Ab) 1999
CURTIS, H. A., *editor*. *Fixed Nitrogen* (B) 2006
CZAKÓ, E. A Chinese prototype of the Bunsen burner (Ab) 165

DAINS, F. B. Advances in the teaching of chemistry since 1914 (Ar) 745
DANIELS, F. Report of the committee on mathematics for chemists (Ar) 2108
DANIELS, F., F. H. GETMAN AND—. *Outlines of theoretical chemistry* (B) 602
DAVEY, W. P., D. MCLACHLAN AND—. A graphical projection method of determining the coördinates of certain point-groups (Ar) 1953
DAVIES, E. C. H. *Fundamentals of physical chemistry* (B) 2148
DAVIS, T. L. Boyle's conception of element compared with that of Lavoisier (Ab) 760
Samuel Guthrie, Jr. (1782–1848) in commemoration of the centenary of the discovery of chloroform (Ab) 760
The Faraday celebrations, 1931 (Ar) 1203
— AND LU-CH'IANG WU. T'ao Hung-Ching (Ar) 859
DAVIS, W. Writing popular chemistry (Ar) 1874
DAWSON, H. G., B. S. HOPKINS AND—. An experiment in visual education in elementary college chemistry (Ab) 1837,
DE BROGLIE, M. Scientific worthies; the Right Honorable Lord Rutherford of Nelson, O.M., F.R.S. (Ab) 2142
DE VRIES, T. Difference quotients and their application to certain types of empirical equations in physical chemistry (Ar) 1491
DE WHALLEY, H. C. S. Unrefined sugar (Ab) 2094
DEGERING, E. F. A simple aspirator trap (Ar) 2134
Mechanically stirred melting-point tube (Ar) 1656
DEHN, W. M. Useless chemical knowledge (Ar) 928
DEGRAY, R. J. Accuracy of certain physico-chemical experiments (Ar) 1075
DEMIASHKEVICH, M. J. The science of education (Ab) 903
DENTON, F. M. Why wave mechanics? (Ab) 1492
DESCH, C. H. Metals in the use of man (Ab) 947
DEWITT, C. B. Glass-working equipment for the small laboratory (Ar) 2003
DICKHART, W. H. Smoke, flash, and fire points of certain fixed oils (Ab) 209
DIEHL, A. E., C. A. SLOAT AND—. Two simple methods for extracting frozen stoppers (Ar) 1303
DIETRICH, H. G. AND E. B. KELSEY. *Laboratory manual to accompany introductory general chemistry* (B) 1267
DIETZ, A. An improved method of introducing the sample into a Victor Meyer vaporization chamber (Ar) 2005
DIETZ, N. Balancing chemical equations (C) 2096
DOANE, H. C. Apparatus for illustrating the arc method for the fixation of nitrogen, and also for the formation of ozone (Ar) 361
DOBBIN, L. Paracelsus and the discovery of hydrogen (C) 1113
DODGE, H. L. College and university teaching (Ab) 1122
DOJA, M. Q. A handy manometer for the organo-chemical laboratory (Ar) 949
DOYLE, A. M. Visual aids in chemical education. The museum (Ar) 1654
DUFF, R. D., K. KERSHNER AND—. A new qualitative test for aluminum (Ar) 1791
DULL, C. E. *Tests in chemistry* (B) 1271
DUNBAR, R. E. AND L. O. SHULT. Necessity of fume hoods for high-school laboratories (Ar) 397
DUNBAR, R. E. AND E. WALKER. The chemistry bulletin board (Ar) 919
DUNN, H. H. Demand for silver starts new rush in west (Ab) 510
DUNN, M. S. Fungous friends and foes (Ab) 1303
DUTCHER, R. A. Some recent advances in biological chemistry (Ar) 947
— AND D. E. HALEY. *Introduction to agricultural biochemistry* (B) 1365
DYSON, G. M. The industrial compounds of fluorine (Ab) 788
568

EFFINGER, B. T. Annealing laboratory glassware (Ab) 1660
EHRENFELD, L. *The story of common things* (B) 1497
ELLIS, H. Microscopy of cotton hairs (Ab) 567
Textile microscopy (Ab) 567
The microscopy of starch (Ab) 567
ELLWOOD, R. S. High-school clubs (Ab) 763
EMDE, H. AND T. HORNEMANN. Lecture experiment on the preparation of hydrocyanic acid from methyl amine (Ab) 158
EMICH, F. *Microchemical laboratory manual* (Ab) 1668
EMLEY, W. E. The Textile Foundation, Inc. (Ar) 1886
U. S. Institute for Textile Research (Ar). 1882
EMMETT, P. H., K. S. LOVE AND—. Repetition of experiments reported by James Woodhouse in 1808 relative to the production of ammonia (Ar) 1748
ENGELDER, C. J. AND W. SCHILLER. A system of qualitative microanalysis (Ar) 1636
ENLOW, E. R. Schools extravagant today without visual education (Ab) 1664
ENTRIKIN, J. B. A new type of atomic models for organic chemistry (Ar) 2081
ESTABROOKE, W. L., J. A. BABOR, — AND A. LEHRMAN. *Elements of general chemistry* (B) 192
Laboratory manual in elements of general chemistry (B) 192
ESTES, G. E. The use of color in slide-making (Ab) 1490
EVANS, H. S. Coördinated engineering education (Ab) 2143
EVANS, U. R. Thin films in relation to corrosion problems (Ab) 164

FÄRBER, E. Contribution to the history of the linking of substance with property (Ab) 761
FALKENHAGEN, H. *Elektrolyte* (B) 2009
FAUSER, G. Concentrated nitric acid by direct synthesis avoids absorption (Ab) 2000
FELSING, W. A. The new chemical laboratory at the University of Texas (CN) 169
FELSING, W. A., E. P. SCHOCH AND—. *General chemistry* (B) 601
FERCHL, F. *1932 Illustrierter Apotheker-kalender* (B) 1500
Von Libau bis Liebig: Chemikerkopfe und -Laboratorien (B) 789
FERGUSON, A. L. Recent developments in a chemical age (Ar) 1181
FERTIG, G. J. The development of scientific research in the South (Ab) 1664

FETHERSTON, F. R. Chemical hazards in fire-fighting (C) 2127
FILBY, F. A. The beginnings of analytical chemistry (Ab) 1131
FILLINGER, H. H. A "living" periodic chart of the elements (Ar) 1807
FINDLAY, A. An obituary of Prof. Wilhelm Ostwald (1853–1932) (Ab) 2138
Chemistry in the service of man (B) 1135
FINLEY, J. F. The press (Ab) 2004
FLEISHER, W. L. Rise of air-conditioning with particular reference to the chemical field (Ab) 368
FLIEDNER, L. J. The preparation and preservation of large crystals of chrome alum (Ar) 1453
FLÖRKE, W. A simple set-up for making water gas, generator gas, and carbon monoxide (Ab) 1833
FOLTZ, E. K. The National Institute of Health: Uncle Sam's organization for medical research (Ar) 31
FORBES, G. S. Investigations of atomic weights by Theodore William Richards (Ar) 453
FOWLES, G. *Volumetric analysis* (B) 1499
FRANK, J. O. *The teaching of high-school chemistry* (B) 2146
— AND T. O. JONES. A chemistry teachers' service bureau (Ar) 1255
FREDENHAGEN, K. AND M. WELLMANN. The corrosive action of hydrogen fluoride and its antidotes (Ab) 2000
FREUDENBERG, K. The relation of cellulose to lignin in wood (Ar) 1171
FRIEDBURG, L. H. Faraday (C) 151
FRIEDMAN, H. B., A. M. WHITE AND—. On the discovery of palladium (Ar) ... 236
FROELICHER, V. Recovery of tin-bearing wastes (Ab) 569
FROLICH, P. K. Catalysis (Ab) 756
FULTON, J. F. Robert Boyle and his influence on thought in the seventeenth century (Ab) 2138
FURMAN, N. H., I. M. KOLTHOFF AND—. *Potentiometric titrations* (B) 398

GAGOS, K. A., A. R. RONZIO AND—. An improvement in the Victor-Meyer method (Ar) 1827
GAMMON, W. E. Copper can now be made hard (Ab) 163
GARARD, I. *An introduction to organic chemistry* (B) 1670
GEGENHEIMER, V. A college course in methods of teaching science (Ar) 1439
GELDERS, J. F. Endless fight for water (Ab) 372
GELMROTH, W., W. HÜCKEL AND—. Progress report in the field of organic chemistry 1929–1931 (Ab) 2002
GERSTENZANG, E. M. An improved method of halogen-ion separation and detection by means of chloramine-T (Ar) 318
GETMAN, F. H. AND F. DANIELS. *Outlines of theoretical chemistry* (B) 602
GIBSON, C. S. Chemistry and the dental profession (Ab) 2002
— AND R. N. JOHNSON. Investigation of the setting of plaster of Paris (Ab) .. 1128
GIBSON, W. H. From flax to fabric (Ab) .. 570
GILBERT, E. C. AND G. C. WARE. Student accuracy in the physical-chemical laboratory (Ar) 103
GILL, S. Petroleum pays increasing toll to corrosion (Ab) 2136
Pipe line problems in the southwest (Ab) 1837
GILLESPIE, L. J. *Physical chemistry. An elementary text primarily for biological and premedical students* (B) 196
GILMAN, H. *Organic syntheses (Collective Volume I)* (B) 1499
GLEASON, S. Deepest oil well opens new fields two miles down (Ab) 574
GLOUBERMAN, E., J. H. PARE AND—. The importance of chemical developments in the textile industries during the industrial revolution (Ar) 1142
GOLDING, J. The milk industry (Ab) 1129
GOMBERG, M. A survey of the chemistry of free radicals (Ar) 439
GOODMAN, N. G. *The ingenious Dr. Franklin* (B) 601
GORDON, N. E. Theodore William Richards (C) 365
GOUDGE, M. F. Limestone and lime in industry (Ab) 370
GRADY, R. I. Chemistry in the college curriculum of the premedical student (Ar) 111
GRAHAM, H. C. Adding interest and reality to qualitative analysis (Ar) 1225
GRASSER, G. *Chemie und chemische Technologie tierischer Stoffe: ein Einführung in die angewandte Zoöchemie* (B) 199
GRAVES, S. The preparation of rubidium (Ar) 1274
GRAY, H. LEB., R. N. TITUS, C. J. STAUD AND—. Microscopy of the cotton cellulose fiber (Ar) 114
Correction (C) 1296
GREEN, W. K. The chemistry of the stars (Ab) 163
GREENUP, H. W., V. N. MORRIS AND—. Rubber latex. Recent scientific and technical developments (Ab) 2137
GREENWOOD, T. Albert the Great: his scientific views (Ab) 2140
Albertus Magnus: his scientific views (Ab) 948
GUILFORD, C. C. The pupil looks at the teacher (Ab) 1838
GÜNTHER, P. Wilhelm Ostwald (Ab) 2002
GUY, J. S. AND A. SKEEN. *A course in quantitative analysis* (B) 1309

HADLEY, W. E. Modern practice in disposal and recovery of textile wastes (Ab) 569
HAGGARD, H. W. Pharmacy a profession of service (Ab) 372
HAHN, F. L. Color detection of calcium in the presence of strontium (Ab) 1661
HALE, H. Sidelights on the life of Dr. Edgar Fahs Smith (Ar) 620
The history of chemical education in the United States from 1870 to 1914 (Ar).. 729
HALEY, D. E., R. A. DUTCHER AND—. *Introduction to agricultural biochemistry* (B) 788
HALL, E. H. James Clerk Maxwell (Ab) .. 571
HALL, W. T., F. P. TREADWELL AND—. *Analytical chemistry, Vol. I, Qualitative analysis* (B) 1309
HALLER, J. Cooling apparatus (Ab) 159
HALLER, J. F. The romance and utility of the electron moment (Ab) 162
HAMMER, A. J. The Reader's Guide as an aid to instruction in chemistry (Ar) ... 1943
HAMMOND, W. E. Cellophane as a substitute for mica (Ab) 2133
HAMOR, W. A., E. R. WEIDLEIN AND—. *Science in action* (B) 191
HANAK, A. Apparatus for the determination of carbon dioxide (Ab) 2131
HANSEN, H. W. Sources of project material (Ar) 1078
HARKINS, W. D. Photographing the birth of an atom (Ab) 1662
HARROW, B., A. LOWY AND—. *An introduction to organic chemistry* (B) 1498
HARRY, R. G. The determination of manganese (Ab) 1303
HARTLEY, H. Faraday and the theory of electrolytic conduction (Ab) 164
Michael Faraday and electrochemistry (Ab) 2140
Michael Faraday and the theory of electrolytic conduction (Ab) 370
HARTOG, P. Joseph Priestley and his place in the history of science (Ab) 571
HARTSUCH, B. E. *Laboratory manual of qualitative analysis* (B) 2147

HAUBEN, S. S. A demonstration of cooling by evaporation (Ar) 1115
HAUPT, K. Casein as a basis for a plastics industry (Ab) 1662
HAZLEHURST, T. H., JR. Presentation of second law theory. II. A proof of the second law for systems composed of perfect gases (Ar) 1087
HEALY, J. J., JR. Corrosion looms large in sulfuric acid plants (Ab) 2137
HEDGES, E. S. Faraday's views on passivity in the light of recent research (Ab) 165
Pectrography and the constitution of colloidal solutions (Ab) 946
Physico-chemico processes in colloidal media (Ab) 946
Solubility problem of colloids (Ab) 2134
The protection of metals by metallic films (Ab) 163
HELLMAN, C. D. Jefferson's efforts toward the decimalization of United States weights and measures (Ab) 761
HENDERSON, W. E., W. MCPHERSON AND—. *An elementary study of chemistry* (B) 2145
HEPBURN, J. S. Notes on the early teaching of chemistry in the University of Pennsylvania, the Central High School of Philadelphia, and the Franklin Institute of Pennsylvania (Ar) 1576
HERBERT, W. AND W. WAHLIG. A new leveling vessel for producing constant pressure in gas analytical investigations (Ab) 160
HERNDON, T. C. The administration of chemistry in state teachers' colleges (Ar) 1448
HETZEL, K. W. Oxymeter, a new apparatus for the quantitative determination of oxygen (Ab) 1998
HEVESY, G. VON—*See*, VON HEVESY, G., this index.
HEYL, P. R. Old and new ideas regarding gravitation (Ar) 1897
HICKMAN, K. Vacuum technic for the chemist (Ab) 1127
HILDEBRAND, J. H. *Principles of chemistry* (B) 1495
HILL, CAROTHERS AND—. Giant molecules and synthetic silk (Ab) 570
HJORT, E. V. AND H. E. WOODWARD. Micro methods in general chemistry (Ar) 1815
HOFFMANN, F. Experiments for the demonstration of the radioactivity of polonium (Ab) 155
Statistical data 1930 for chemical instruction (Ab) 1306
HOKE, C. M. Something new—aluminum jewelry (Ab) 2135
HOLBECK, E. S. Teacher participation in community affairs (Ab) 573
HOLMYARD, E. J. Mansur Al-Kamily (Ab) 760
HOLSTEIN, P. F. Fortunes and misfortunes in iodine (Ab) 2000
HOLY, T. C. AND D. H. SUTTON. *List of essential apparatus for use in high-school sciences* (B) 790
HOPKINS, B. S. AND H. G. DAWSON. An experiment in visual education in elementary college chemistry (Ab) 1837, 2142
HOPKINS, B. S. AND H. A. NEVILLE. *Laboratory exercises and problems in general chemistry* (B) 397
HOPKINS, G. E. The place of chemistry in the carpet industry (Ab) 2143
HORNEMANN, T., H. EMDE AND—. Lecture experiment on the preparation of hydrocyanic acid from methyl amine (Ab) 158
HOUGEN, O. A. AND K. M. WATSON. *Industrial chemical calculations* (B) 605
HOUSEMAN, H. V. A simple method for calculating the proportions of various substances of known composition to give a mixture of definite composition (C) 941
HOWELLS, H. P. A report on drills to decrease picture-memorizing in the study of graphical chemistry (Ar) 1249
Balancing chemical equations (C) 753
HUDELSON, E. Class-size standards at the college level (Ab) 1307
HUFFMAN, H. M., G. S. PARKS AND—. *The free energies of some organic compounds* (B) 2149
HÜCKEL, W. AND W. GELMROTH. Progress report in the field of organic chemistry 1929–31 (Ab) 2002
HULL, C. AND C. J. WEST. The eighth census of graduate research students in chemistry, 1931 (Ar) 1472
HULL, C., C. J. WEST AND—. Doctorates in chemistry and related fields conferred by American universities, 1930–31. Correction (C) 154
Doctorates in chemistry and related fields conferred by American universities, 1931–32 (Ar) 1976
HUMKE, H. L. Indices of the qualities of a faculty (Ab) 371
HUNTER, H. L., C. E. MULLIN AND—. Chemical constitution of wool and silk (Ab) 570
HUNTER, R. F. Some applications of the electronic theory of chemistry (Ab) 507
Some applications of the electronic theory to valency (Ab) 1130
HURD, A. W. Report on the experimental use of units in physics (Ab) 1306
HURD, C. B. An experiment on a bimolecular reaction for the physical chemistry laboratory (Ar) 513
HURD, L. C., G. W. BATCHELDER AND—. Silver-bismuth alloys in quantitative analysis (Ar) 929
HUSAIN, H., H. E. STAPLETON AND—. Report on the Mā'al-Waragā (Ab) 2140
HYDE, G. H. Home-made apparatus for the physics class (Ab) 565
HYDE, M. E., E. J. SHAW AND—. An equilibrium experiment for an introductory laboratory course in physical chemistry (C) 364
IRVINE, J. C. Alexander Scott Couper (Ab) 571
JOHNSON, J. B. The proposed 1932 college testing program of the coöperative test service (Ab) 572
JOHNSON, R. N., C. S. GIBSON AND—. Investigation of the setting of plaster of Paris (Ab) 1128
JOHNSON, W. P. Problems affecting the publishing business and the teaching profession (Ab) 371
JOHLIN, J. M. Rhythmic phenomena in gels (Ab) 1302
JONES, T. O., J. O. FRANK AND—. A chemistry teachers' service bureau (Ar) 1255
JORDAN, L. A., W. H. J. VERNON AND—. The relation between corrosion and paint (Ab) 1303
JUDD, C. H. The psychology of the learning processes at the higher levels (Ab) 1133
KAEMPFER, L. J. The scientific crime detection laboratory (Ab) 757
KAHLENBERG, L. The metals in electrochemistry (Ab) 568
KAMM, O. Chemistry and the quest for health (Ar) 1719
Qualitative organic analysis (B) 2148
KAPITZA, P. AND J. D. COCKCROFT. Hydrogen liquefaction plant at the Royal Society Mond Laboratory (Ab) 948
KARVÉ, D. D. AND G. D. ADVANI. *Model essays in organic chemistry* (B) 1312
KELLY, T. L. Some of the fallacies of colloid chemistry (Ab) 572
KELSEY, E. B., H. G. DIETRICH AND—. *Laboratory manual to accompany introductory general chemistry* (B) 2005

KEMMERER, W. W. Does research bring disrespect? (Ab) ... 950
KENDALL, A. I. Living organisms as chemical reagents (Ar) ... 2013
KENDALL, J. Alexander Smith as an educator (Ar) ... 254
Balancing chemical equations (C) ... 360
KERR, W. R. Types, uses, and testing of refractory cements (Ab) ... 1663
KERSHNER, K. AND R. D. DUFF. A new qualitative test for aluminum (Ar) ... 1271
KILANDER, H. F. A comparative study of science education in Sweden and the United States (Ab) ... 2143
KILIANI, H. My life and work (Ar) ... 1908
KILLEFFER, D. H. Quick-freezing solves food problems (Ab) ... 369
Solid carbon dioxide in laboratory technic (Ab) ... 755
KILPATRICK, M., JR. The teaching of the theory of the dissociation of electrolytes. I. The application of the law of mass action to solutions of electrolytes (Ar) ... 840
III. The colorimetric method (Ar) ... 1226
— AND M. L. KILPATRICK. The teaching of the theory of the dissociation of electrolytes. II. The definition of pH (Ar) ... 1010
KILPATRICK, W. H. First things in education (Ab) ... 1307
KING, C. V. An equilibrium experiment for an introductory laboratory course in physical chemistry. Method of extrapolating to zero concentration (C) ... 150
KING, W. R. Electron tubes. A new versatile production tool (Ab) ... 1662
KINGSBURY, P. C. Ceramics and chemistry (Ar) ... 795
KINGZETT, C. T. *Chemical encyclopaedia* (B) ... 2008
KIPPING, F. S. AND F. B. KIPPING. *Perkin and Kipping's organic chemistry, Parts I and II* (B) ... 1311
KIRK, R. E. Research for the undergraduate (Ar) ... 280
The chemistry teacher and service courses in the land-grant college (Ar) ... 538
KIRKPATRICK, S. D. Southwest still a proving ground for petroleum technology (Ab) ... 1836
KISSEL, J. AND N. KRAMER. A simple electric furnace (Ar) ... 147
KLEIBER, M. A simple apparatus for distillation of mercury (Ab) ... 1125
KLEINER, I. S., H. TAUBER AND —. A convenient method for the crystallization of sugars and other organic substances (Ar) ... 1970
KNEELAND, F. H. Blasting without explosives; a new job for carbon dioxide (Ab) ... 2133
KNEEN, O. H. Who said "no more gold rushes"? (Ab) ... 568
KNIGHT, N. *Notes on blowpipe analysis* (B) ... 605
KNUDSON, C. M. The Denver meeting of the American Chemical Society (Ab) ... 2144
KOCHAKIAN, C. D. The catalytic preparation of acetone from acetic acid (Ar) ... 1649
KOLTHOFF, I. M. AND N. H. FURMAN. *Potentiometric titrations* (B) ... 398
KRAIS, P. AND H. MERKERT. A simple quantitative method of determining ozone in ozonized air (Ab) ... 1302
KRAMER, N., J. KISSEL AND —. A simple electric furnace (Ar) ... 147
KRAUS, C. A. Solutions of metals in nonmetallic solvents: some of their physical and chemical properties (Ab) ... 1130
KRAUS, P. Studies on Jabir ibn Hayyan (Ab) ... 760

LAMPITT, L. H. The chemist and food (Ab) ... 1129
LASKI, H. J. The American college president (Ab) ... 950
LATIMER, W. M., W. C. BRAY AND —. *A course in general chemistry including an introduction to qualitative analysis* (B) ... 1496
LAWALL, C. H. The history of quinine (Ab) ... 949
LEHRMAN, A., J. A. BABOR, W. L. ESTABROOKE AND —. *Elements of general chemistry* (B) ... 192
Laboratory manual in elements of general chemistry (B) ... 192
LEHRMAN, L. Balancing chemical equations (C) ... 944, 1125
LEVENE, P. A. AND L. W. BASS. *Nucleic acids* (B) ... 198
LEVESCONTE, A. Adapting elementary chemistry to girls' interests (Ar) ... 1620
LEVEY, H. A. Louisiana becomes industrial (Ab) ... 1837
LEVY, S. I. The manufacture of sulfuric acid (Ab) ... 1491
LEWIS, J. R. A convenient method of cleaning pipets (Ab) ... 1660
LEWIS, S. J. Quantitative spectroscopy with special reference to the "ratio quantitative system" (Ab) ... 1999
LIESCHE, O. *Die chemische Analyse, XXX Band. Rechenverfahren und Rechenhilfsmittel mit Anwendungen auf die analytische Chemie* (B) ... 1310
LISK, G. M. The making of ozone as a laboratory exercise (Ar) ... 2099
LITTLETON, J. H., JR. AND H. C. BATES. Heat transfer through industrial glass tubing (Ab) ... 1663
LOCKHART, G. Quartz takes up firefighting (Ab) ... 2135
LÖWENSTEIN, E. A new air drier for analytical balances (Ab) ... 1127
Automatic suction and dropping device (Ab) ... 2131
LONG, H. J. An experiment in laboratory technic (Ar) ... 931
LONG, J. S. AND H. V. ANDERSON. *Chemical calculations* (B) ... 968
LORING, F. H. Science in the melting pot (Ab) ... 2004
LOVE, K. S. AND P. H. EMMETT. Repetition of experiments reported by James Woodhouse in 1808 relative to the production of ammonia (Ar) ... 1748
LOWMAN, O. E. Comparative cost of soaps as water softeners: a freshman experiment in chemistry (Ar) ... 1809
LOWRY, T. M. *Inorganic chemistry* (B) ... 785
LOWY, A. AND B. HARROW. *An introduction to organic chemistry* (B) ... 1498
LUCAS, A. *Forensic chemistry and scientific criminal investigation* (B) ... 401
LUCK, J. M., *editor*. *Annual review of biochemistry* (B) ... 2007
LUDWIG, E. Edison, the greatest American of the century (Ab) ... 571
LUGER, K. E., E. C. WRIGHT AND —. Where stainless alloys stand in chemical construction (Ab) ... 2137
LUTZ, E. Manufacture of rolled plate (Ab) 569

MACHT, D. I. The relation of pharmacology to hygiene, public health, and chemistry (Ar) ... 1876
MACK, E., JR. The size and shape of molecules (Ab) ... 162
MACKENZIE, J. E. An experiment to show the catalytic action of manganese dioxide on the decomposition of potassium chlorate and the measurement of the products of the reaction (Ar) ... 1111
MACKEY, B. H., D. V. MOSES AND —. Disposing of ammonia liquor as a waste product (Ab) ... 2001
MADARIS, D. An inexpensive microscopic projector (Ab) ... 1661
MAGER, E. H. F. White iron hydroxide (Ab) ... 158
MAHIN, E. G. *Quantitative analysis* (B) ... 1667

MALIN, J. E. *Construction of a diagnostic test in the mechanics and related fundamentals of high-school chemistry* (B).... 1136
MANTELL, C. L. Dollars and cents—"The operating cost of corrosion" (Ab) 2136
MARSHALL, A. Faraday's researches in electrochemistry (Ab)..... 164
MARTIN, G. Iron mining in Utah (Ab)... 568
MASON, W. P. *Examination of water, chemical and bacteriological* (B)..... 399
MATZKE, H. W. A chemical curiosity (Ar) 1259
MAXSON, R. N. The niter caves of Kentucky (Ar)..... 1846
MAXTED, E. B. The nitrogen industry in 1931 (Ab)..... 758
MCARDLE, W. S. Aluminum utility exemplified in a modern research laboratory (Ar)..... 834
MCCLOSKEY, G. E. Coal-tar distillation by hot gas at the coke oven plant (Ab). 1663
MCDONALD, D. Platinum (Ab)..... 1303
MCDONALD, E. Some chemical aspects of cancer research (Ar)..... 820
MCGILL, M. V. Vocational guidance in chemistry (Ar)..... 885
— AND G. M. BRADBURY. *Chemistry workbook and laboratory guide* (B)..... 193
MCGILL, M. V., G. M. BRADBURY AND—. *The twentieth century practice-exercises and objective tests in chemistry* (B)..... 194
MCHUGH, F. D. "Rubber" from a chemical laboratory (Ab)..... 1663
MCKEE, R. H. Alexander Smith, the investigator (Ar)..... 246
MCKNIGHT, T. Modern nitric acid production demands special alloys (Ab).. 2136
MCLACHLAN, D. AND W. P. DAVEY. A graphical projection method of determining the coördinates of certain point-groups (Ar)..... 1953
MCLEOD, C. Radium strike in Canadian wilds (Ab)..... 1129
MCMURRAY, J. P. Individualized science instruction in junior high (Ab)..... 1306
MCPHERSON, W. AND W. E. HENDERSON. *An elementary study of chemistry* (B).. 2145
MEGGERS, W. F. Rhenium (Ab)..... 369
MEISTER, M. Instruction plan material for science classes. Chemistry (Ab).. 2142
Living in a world of science. Water and air; Energy and power; Heat and health (B)..... 397
MELDRUM, A. N. Lavoisier's three notes on combustion: 1772 (Ab)..... 2139
MELL, C. D. Historical sketch of logwood industry (Ab)..... 572
Interesting sources of natural dyestuffs (Ab)..... 569
MELVILLE, H. W., JR. A sensitive direct-reading mercury manometer (Ab)..... 565
MELVILLE, J. H. Balancing chemical equations (C)..... 1299
MENSCHUTKIN, B. Balancing chemical equations (C)..... 560
MERICA, P. D. Research in the nickel industry (Ab)..... 758
MERKERT, H., P. KRAIS AND—. A simple quantitative method of determining ozone in ozonized air (Ab)..... 1302
METZGER, H. Eugene Chevreul, historian of chemistry (Ab)..... 2139
Introduction to a study of the rôle of Lavoisier in the history of chemistry (Ab) 2139
MIALL, S. *A history of the British chemical industry* (B)..... 787
MICHAELIS, L. Wilhelm Ostwald (Ab)... 2002
MIELI, A. The rôle of Lavoisier in the history of the sciences (Ab)..... 2140
MILBAUER, J. An atomizer for spectral tests (Ab)..... 161
MILLER, H. Dye industry searches for cheaper plant materials (Ab)..... 2136
MILLER, J. D. Pulp and paper advance fight against corrosion loss (Ab)..... 2136
MILLER, L. P. Disregarding department frontiers (Ar)..... 1069
MILLIKIN, R. A. Education and unemployment (Ab)..... 574
The natural sciences (Ab)..... 2004
MILLS, J. E. Report of the committee on the teaching load for chemistry teachers (Ar)..... 2111
MILLS, W. H. Some aspects of stereochemistry (Ab)..... 2144
MITCHELL, J. A. Heterogeneous catalysis (Ar)..... 261
Organic catalytic reactions (Ar)..... 59
MITCHELL, L. P. Improvised spot plates (C)..... 364
MOK, M. Radium, life-giving element, deals death in the hands of quacks (Ab) 1662
MOORE, H. S. Certain problems of the machine age and their educational implications (Ab)..... 1306
MORAN, T. Science and the meat industry (Ab)..... 1129
MORAWETZ, V. Needed objectives for our schools (Ab)..... 572
MORRIS, H. E. The catalytic decomposition of ethyl alcohol (Ar)..... 1730
MORRIS, V. N. AND H. W. GREENUP. Rubber latex. Recent scientific and technical developments (Ab)..... 2137
MORRISON, L. H., M. J. REED AND—. Determining friction losses in piping systems (Ab)..... 2001
MOSES, D. V. AND B. H. MACKEY. Disposing of ammonia liquor as a waste product (Ab)..... 2001
MOULTON, H. G. The social sciences (Ab) 2004
MULLIN, C. E. American synthetic yarn industry during 1930 (Ab)..... 570
— AND H. L. HUNTER. Chemical constitution of wool and silk (Ab)..... 570
MUNCH, R. H. A simple pressure regulator for vacuum distillations (Ar)..... 1275
MUNRO, W. B. The advancement of teaching (Ab)..... 950
MURPHY, L. J., L. K. ARNOLD AND—. *Fighting fires which involve chemicals* (B)..... 200
MURRAY, M. J., A. W. AVENS AND—. The detection of strontium in the presence of calcium (Ar)..... 522
NADLER, G. Insulated clamps for ring stands (Ab)..... 565
NEISHLOSS, M., W. M. THORNTON, JR., R. ROSEMAN AND—. The determination of water in hydrated salts by means of the nickel-crucible radiator (Ar)..... 1645
NERNST, W. Wilhelm Ostwald (Ab)..... 1664
NEUMANN, H. Training teachers for character education (Ab)..... 1308
NEVILLE, H. A., B. S. HOPKINS AND—. *Laboratory exercises and problems in general chemistry* (B)..... 397
NEWELL, L. C. Chemical education in America from the earliest days to 1820 (Ar)..... 677
Faraday's contributions to chemistry (Ab)..... 164
Historical sketch of the Division of History of Chemistry, American Chemical Society (Ar)..... 667
NICHOLAS, A. B. Hum and bug (Ab)..... 167
NIERENSTEIN, M. Helvetius, Spinoza, and transmutation (Ab)..... 1664
The early history of the first chemical reagent (Ab)..... 761
NITCHIE, C. C. Practical analysis with the spectroscope (Ab)..... 368
NODDACK, I. AND W. NODDACK. The element rhenium (Ab)..... 161
NORRIS, J. F. The significance of pyrolysis temperatures (Ar)..... 1890
NORWOOD, C. The Science Masters' Association London meeting, December 29, 1931 (Ab)..... 1492
NOYES, W. A., JR. How the new physics has changed the viewpoint of chemistry (Ab)..... 756

NYROP, J. E. The catalytic action of surfaces (Ab) ... 163

ODELL, C. W., L. A. ASTELL AND—. *High-school science clubs* (B) ... 1314

ODELL, C. W., A. W. CLEVENGER AND—. *High-school libraries in Illinois* (B) ... 200

OENSLAGER, G. Recent developments in the rubber industry (Ar) ... 975

OLIVE, T. R. Devising plant and process for simplified rayon manufacture (Ab). 1663

OLIVE, T. R., W. S. CALCOTT AND—. Choosing and using materials for chemical plant construction (Ab) ... 2135

OLSEN, J. C. *Unit processes and principles of chemical engineering* (B) ... 1840

OLSSON, H. L. A demonstration: Fixation of atmospheric nitrogen ... 1829

ORMANDY, W. R. The future development of coal (Ab) ... 370

OSBURN, D. F. The use of visual aids in teaching general science by a contract plan (Ab) ... 367

OSOL, A. Tincture of ferric chloride (Ab). 568

OTTO, E. Balancing chemical equations (C) 361

OYSTER, L. The use of unknowns in teaching organic chemistry (Ar) ... 910

PANETH, F. Albertus Magnus as chemist (Ab) ... 1303

PARK, J. H. AND E. GLOUBERMAN. The importance of chemical developments in the textile industries during the industrial revolution (Ar) ... 1142

PARKS, G. S. AND H. M. HUFFMAN. *The free energies of some organic compounds* (B) ... 2149

PARSONS, C. L. Priestley memorial and medal (Ar) ... 643

PATCH, E. M., M. E. CHARLESWORTH AND —. Heat of reaction (Ab) ... 1490

PATTERSON, T. S. John Mayow in contemporary setting (Ab) ... 760

PATTON, T. C. Temperature comparison chart (Ar) ... 1110

PATWARDHAN, V. N. Inserting glass tubing into tight-fitting rubber stoppers (C) ... 1489

PAUL, J. B. The length of class periods (Ab) ... 1307

PAULING, L. The packing of spheres (Ab) 1128

PAYNE, V. F. The lecture-demonstration and individual laboratory methods compared (Ar). I. The literature .. 932
II. The distribution of time ... 1097
III. Experimental ... 1277

PEASE, H. D. The oyster—Modern science comes to the support of an ancient food (Ar) ... 1674

PEET, B. W. Balancing chemical equations (C) ... 752

PENFOLD, A. R. Natural chemical resources of Australian plant products. Part II (Ar) ... 429

PERRY, R. C. Reliability of teachers' grades in science (Ab) ... 573

PERSING, K. M. *Persing laboratory chemistry test. Forms A and B* (B) ... 1314

PETERSON, B. H. A device for measuring the comparative conductivity of electrolytes (Ar) ... 923

PETTIT, D. D. Organization of science clubs in the high school (Ar) ... 1260

PETTIT, M. Slide making in the classroom (Ab) ... 367

PETZOLD, H. AND R. SCHARP. Apparatus for the determination of the volume relationship in the synthesis of water vapor (Ab) ... 1997

PHARES, L. I., H. W. BAKER AND—. A chemistry exhibit (Ar) ... 501

PHILLIPS, D. E. What is science? (Ab) ... 1308

PIDGEON, M. E. *Women in industry* (B) .. 605

PIERCE, W. C. Recent applications of X-rays in investigations of molecular structure (Ar) ... 845

PINES, C. C. The story of alcohol (Ab) ... 567

POLLARD, J. H. Looking forward in sulfur mining (Ab) ... 1837

POLLITT, G. P. Developments in the chemical industry during 1931 (Ab) ... 757

POPE, W. J. Forty years of stereochemistry (Ab) ... 2141

POST, H. W. The tutorial plan at Buffalo (Ab) ... 2142

POTTS, J. H. The effect of sunlight upon man (Ab) ... 373

POULEUR, A. L. Atomic and molecular structure models as a visual aid in the teaching of chemistry (Ar) ... 301

POWERS, S. R. *The thirty-first yearbook of the National Society for the Study of Education. Part I. A program for teaching science* (B) ... 962

PRATT, F. R. A glass stopper puller (Ab). 2132

PRATT, J. D. A review of the British chemical industry in 1931 (Ab) ... 758

PRINGSHEIM, H. *Chemistry of the saccharides* (B) ... 1312

PRUITT, C. M. *Science reading material for pupils and teachers* (B) ... 1672

QUAM, G. N. General chemistry laboratory practice: quantitative exercises (Ar) ... 1474

RAAB, H. A new extraction dialyzer (Ab) 160

RAISTRICK, H. Milk pasteurization (Ab). 1129

RANDALL, D. L. Premedical physical chemistry (Ar) ... 1096

RASK, O. S. An introductory story of baking powders (Ar) ... 1340

READ, J. Need of a broader vision among chemists (Ab) ... 372

REDMAN, S. L. An extractor for "frozen" bottle stoppers (C) ... 940

REED, R. D. Range of subjects taught, teaching load, and preparation in science of the science teachers of New Jersey (Ar) ... 326

REED, M. J. AND L. H. MORRISON. Determining friction losses in piping systems (Ab) ... 2001

REEF, V. E. The determination of the equivalent weight of magnesium (Ar). 524

REESE, A. M. Potassium permanganate as an antidote for snake venom (Ab) .. 2135

REID, E. E. A new era in synthetic organic chemistry (Ar) ... 1561

REID, J. H. Nicotine (Ab) ... 568

REINDEL, F. The eightieth birthday of Richard Anschütz (Ab) ... 1131

REVES, F. A new science building at Hendrix College (CN) ... 374

RHEINBOLDT, H. The demonstration of liquefied gases (Ab) ... 155
— AND L. BEUMELBURG. The demonstration of the Solvay-soda process in the classroom (Ab) ... 1832

RHODEHAMEL, H. W. Chemistry as a vocation. Your start toward an industrial job in chemistry (Ar) ... 1062

RICHARDSON, L. B. *General chemistry* (B) 1494
— AND A. J. SCARLETT, JR. *A laboratory manual of general chemistry* (B) ... 1665

RISCHBIETH, P. Decomposition of carbon monoxide in the presence of iron and iron oxides (Ab) ... 157
The synthesis of hydrogen chloride in a gas reaction double sphere (Ab) ... 156

ROBERTSON, G. R. Adaptation of the Bunsen burner to natural gas (Ar) 1963
Sublimation (Ar) ... 1713

ROBERTSON, J. H. A stopper substitute for the Victor Meyer outer jacket (Ar). 925

ROBSON, W., W. J. BOYD AND—. A modified absorption tube for the determination of hydrogen in organic substances by the micro-analytical method of Pregl (Ab) ... 367

RODEBUSH, W. H. AND E. K RODEBUSH. *An introductory course in physical chemistry* (B) 1839
ROE, J. H. *Principles of chemistry* (B) ... 2005
ROGERS, A. *Industrial chemistry* (B) 786
ROGERS, H. F. New science hall at Fairmont State Teachers' College (CN) ... 952
ROGERS, L. J. The production of oil from coal (Ab) 163
ROGERS, R. H. Small battery charger supplies current for nickel plating (Ab) 2133
RONZIO, A. R. AND K. A. GAGOS. An improvement in the Victor-Meyer method (Ar) 1827
ROOS, C. F. The Syracuse meeting of the American Association for the Advancement of Science and associated societies (Ab) 2004
ROSE, E. R. An apparatus for removing glass stoppers from acid bottles (Ar) .. 149
ROSE, W. C. Dietary facts and fads (Ab) . 162
ROSEMAN, R., W. M. THORNTON, JR.,—AND M. NEISHLOSS. The determination of water in hydrated salts by means of the nickel-crucible radiator (Ar) 1645
ROSENDAHL, F. Tornesite (chlorinated rubber) (Ab) 2134
ROSENGARTEN, G. Radioactivity (Ab) ... 370
ROSENTHALER, L. Oxidation reactions with ferricyanides (Ab) 1661
ROSSMAN, J. *The law of patents for chemists* (B) 1135
What the chemist should know about patents (Ar) 486
RUDD, W. F. Pharmaceutical education (Ar) 272
RUSSEL, E. J. The changing outlook in agriculture (Ab) 370
RUSSELL, H. N. The sun an atom builder: A new theory (Ab) 373
RUTHERFORD, E. The origin of the gamma rays (Ab) 2134
The structure of the atomic nuclei (Ab) . 2135
RUZICKA, L. The life and work of Otto Wallach (Ab) 1304

SABATIER, P. Nickel as a catalyst in chemical reactions (Ab) 1130
SADTLER, R. E. How to prepare a patent application (Ab) 2004
SAMMIS, J. H. A plan for introducing biographical material into science courses (Ar) 900
SANDERS, J. P. A method for the preservation of book bindings (Ab) 2135
SARTON, G. The discovery of the electric cell (1800) (Ab) 761
Introduction to the history of science. Vol. II. From Rabbi ben Ezra to Roger Bacon (B) 1665
SATTLER, A. Cleaning platinum ware (Ab) 1660
SCARLETT, A. J., JR., L. B. RICHARDSON AND—. *A laboratory manual of general chemistry* (B) 1665
SCHAEFFER, H. F. Suitable projects in plant chemistry (Ar) 1103
SCHAFFLE, A. E. F. The pupil checks the teacher (Ab) 573
SCHANTL, E. An interesting source of iodine (Ab) 1661
SCHAPIRO, N. A convenient method of applying liquid paraffin (Ab) 1660
SCHARF, R., H. PETZOLD AND—. Apparatus for the determination of the volume relationship in the synthesis of water vapor (Ab) 1997
SCHEFFER, F. E. C. Personal reminiscences of Dr. Smits (Ab) 165
SCHEFLAN, L. Balancing chemical equations (C) 358
Extinguishing fires with chemicals (Ar) .. 1503
SCHILLER, W., C. J. ENGELDER AND—. A system of qualitative microanalysis (Ar) 1636
SCHLENK, W. The sixtieth birthday of Richard Willstätter (Ab) 2002
SCHOCH, E. P. AND W. A. FELSING. *General chemistry* (B) 601
SCHOFIELD, M. Developments in the acetic acid industry (Ab) 1303
Recent developments in activated carbon (Ab) 568
SCHUMACHER, E. E. The nature of metals in relation to their properties (Ab) 756
SCHWARZ, E. R. Microanalysis of fabrics (Ab) 567
SEGERBLOM, W. New science building at The Phillips Exeter Academy (CN) ... 766
SEVRINGHAUS, E. L. Should scientific discoveries be patented? (Ab) 2144
SHAW, E. J. AND M. E. HYDE. An equilibrium experiment for an introductory laboratory course in physical chemistry (C) 364
SHAW, R. W. An adjustable apparatus stand and truck (Ab) 2133
SHERMAN, H. C. *Chemistry of food and nutrition* (B) 1671
SHUBROOKS, G. E. Metallurgy's contribution to accuracy in time-measuring (Ar) 1358
SHULT, L. O., R. E. DUNBAR AND—. Necessity of fume hoods for high-school laboratories (Ar) 919
SILVERMAN, A. Some recent developments in American glass manufacture (Ab) 569
SIMONS, J. K. AND E. C. WAGNER. Comparison of eight types of small fractionating columns from the viewpoint of usefulness in the student laboratory of organic chemistry (Ar) 122
SKEEN, A., J. S. GUY AND—. *A course in quantitative analysis* (B) 1309
SLAWTER, C. R. Dynamite's giant power makes impossible tasks easy (Ab) 569
SLICHENMYER, H. L. Mirrors and B-batteries as student projects (Ar) 1648
SLOAT, C. A. AND A. E. DIEHL. Two simple methods for extracting frozen stoppers (Ar) 1267
SLOTTERBECK, O. Balancing chemical equations (C) 751
SMITH, E. C. Science in the city of London (Ab) 165
SMITH, E. P. A chapter in historical chemistry (Ar) 535
SMITH, F. W. Trends in teacher-training (Ab) 1838
SMITH, G. B. L. Research in the undergraduate curriculum of the course in chemistry (Ar) 285
SMITH, G. F. Applied analytical chemical research necessitates promotional advertising (Ar) 84
— AND V. R. SULLIVAN. A new and simplified colorimeter especially designed for the colorimetric estimation of manganese by the periodate method (Ar) 1461
SMITH, G. McP. Chemistry in high school and university (Ab) 161
SMITH, J. H. H. Effect of class size upon the efficiency of instruction (Ab) 2142
SMITH, J. M. The state university: A service institution (Ab) 1307
SMITH, M. E. The conservation of structural timber (Ab) 759
SMITH, O. M. Educating chemical engineers in the southwest (Ab) 1838
Organization of freshmen chemistry classes (Ar) 1946
SMITH, V. C. Sex differences in the study of general science (Ab) 762
SMITHELLS, C. J. Applications of photoelectric cells in chemical engineering (Ab) 2002
SORS, P. The quantitative determination of ammonia without distillation (Ab).. 1128
SOULE, B. A. Book ability (Ar) 1940
SPARKS, B. Fortunes built on gold from garbage (Ab) 574

SPETER, M. A newly discovered note by Lavoisier from October 20, 1772 (Ab). 948
Berzelius' publications on catalysis (Ab) 2003
On the early history of calcium acid phosphate and the decomposition of bones with acids (Ab) 1132
STAHL, W. Pyrosulfuryl chloride, $S_2Cl_2O_5$ (Ab) 369
STANHOPE, R. W. *The teaching of chemistry in the secondary schools of New South Wales, with special reference to the conditions existing in the United States of America* (B) 1314
STANLEY, D. The science of voice (Ab) 574
STAPLETON, H. E. Note on the Arabic mss. on alchemy in the Asafiyah Library, Hyderrâbâd (Deccan), India (Ab) 2140
— AND H. HUSAIN. Report on the Mâ'al-Waragâ (Ab) 2140
STARECK, J. E. A natural periodic system including the rare earths (Ar) 1625
STAUD, C. J., R. N. TITUS, — AND H. LEB. GRAY. Microscopy of the cotton cellulose fiber (Ar) 114
Correction (C) 1296
STEINER, L. E. Contribution of high-school chemistry toward success in the college chemistry course (Ar) 530
STEINMAYER, R. A. Salt domes of Louisiana and Texas (Ab) 1836
STEWART, A. W. *Recent advances in organic chemistry* (B) 194
STEWART, G. W. The future man of science (Ab) 166
STIEGLITZ, J. Edward Curtis Franklin, the man (Ab) 1491
STINE, C. M. A. Chemical research: A factor of prime importance in American industry (Ar) 2032
STONE, C. H. Preparation of rhombic sulfur crystals (C) 941
Some experiments with crystals (Ar) 1107
STONE, I. An improvised Victor Meyer apparatus (Ab) 755
STRAUSS, E. D. Gold mining; facts and figures (Ab) 369
STRAUSS, J. The discovery of the elements. Vanadium (C) 1657
STROHAVER, G. F. The pandemic idea in high-school chemistry (Ab) 572
STROUP, F. P. What is gas? (Ab) 370
STRUNZ, F. The alchemy and the alchemistic cosmogony of Theophrastus Paracelsus (Ab) 2140
STYLE, D. W. G. *Photochemistry* (B) 197
SULLIVAN, E. C. Notes on journal articles on nature of glass (Ab) 570
SULLIVAN, V. R., G. F. SMITH AND—. A new and simplified colorimeter especially designed for the colorimetric estimation of manganese by the periodate method (Ar) 1461
SUSSMAN, S. An improvement on the chloramine-T method of halogen-ion detection (Ar) 1652
SUTTON, D. H., T. C. HOLY AND—. *List of essential apparatus for use in high-school sciences* (B) 790
SWAN, J. N. Decennial meeting, Division of Chemical Education, American Chemical Society (Ar) 670
SWAYZE, C. I. Automatic control for vacuum apparatus (Ab) 2132
SWEATT, H. B. A brief account of glue and its place in industry (Ar) 1553

TAGGART, W. T. Edgar Fahs Smith (Ar). 613
TALMEY, M. The fundamentals of the relativity theory (Ab) 760
TAUBER, H. AND I. S. KLEINER. A convenient method for the crystallization of sugars and other organic substances (Ar) 1970
TAYLOR, A. L. A new code system for dispensing qualitative analysis unknowns (Ar) 1811
TEALE, E. W. Hidden crime clues bared by chemist's magic (Ab) 368
THOMPSON, W. S., L. V. CLIFCORN AND—. A convenient mercury measuring device (Ab) 1660
THOMSON, E. The Faraday centenary (Ab) 165
THORNTON, W. M., JR., R. ROSEMAN AND M. NEISHLOSS. The determination of water in hydrated salts by means of the nickel-crucible radiator (Ar) 1645
THORPE, J. Schools and research (Ab) 1493
TIMM, J. A. *An introduction to chemistry. A pandemic text* (B) 1839
TITUS, R. N., C. J. STAUD, AND H. LEB. GRAY. Microscopy of the cotton cellulose fiber (Ar) 114
Correction (C) 1296
TOBEY, J. A. Milk enriched with vitamin D (Ab) 1302
TORRANCE, D. M. Vitamins and flavor (C) 151
TOSCANI, V. A. A hot-water funnel (Ab) 1660
TOTTEN, C. W. A system for eliminating bookkeeping in lending articles from the laboratory storeroom (Ar) 1252
An automatic valve for a siphon (Ar) 1831
TOUTON, F. C. Research projects of the secondary-school level carried on in California cities during 1930–31 (Ab) 371
TOWER, O. F. *A course of qualitative chemical analysis of inorganic substances* (B) 967
TOWN, G. G. Unifying lecture, quiz, and laboratory sections in general chemistry (Ar) 1065
TRANTON, W. The barium industry (Ab) 946
TREADWELL, F. P. AND W. T. HALL. *Analytical chemistry, Vol. I, Qualitative analysis* (B) 1309
TREASHER, R. C. Individualized work in science (Ab) 1133
TRUG, E. Testing the reaction of distilled water (Ab) 756
TRUMPER, M. The frontiers of science (Ar) 1373
TURNER, F. W. An English impression of American general science (Ab) 2003
TURNER, R. R. Away with fancy frills and fads (Ab) 371
TURRILL, P. L. Studies in the mineral and chemical resources of the Mojave Desert (Ar) I 1318
II 1530
III. The inspection trip 2040
TWYMAN, F. *The practice of spectrum analysis with Hilger instruments, including a note on the various types of emission spectra* (B) 791
TYLER, S. L. Non-metals head list in HCl resistance (Ab) 2136
TYMAN, C. M., R. J. WILLIAMS AND—. Neutral standard for hydrogen-ion work and accurate titrations which can be prepared in one minute (Ab) 1662

UPSON, F. W. Chemistry at Nebraska (Ab) 1664

VACHER, H. C. Oxygen, nitrogen, and hydrogen as constituents in metals (Ar) 47
VAN KLOOSTER, H. S. Vapor pressure-vapor composition curves of ideal solutions of two volatile, consolute liquids (Ar) 1455
VAN NIEUWENBURG, C. J. Systematic qualitative analysis with the help of many new reactions (Ab) 1128
VAUGHN, T. H. An automatic alarm for use in gas absorption (Ar) 528
VERNON, W. H. J. AND L. A. JORDAN. The relation between corrosion and paint (Ab) 1303
VIEHOEVER, A. Silicon, the element of a thousand uses (Ab) 946
VIOSCA, P., JR. Spontaneous combustion in the marshes of southern Louisiana (Ab) 1303
VON HEVESY, G. *Chemical analysis by X-rays and its applications* (B) 1841

VON LIPPMANN, E. O. A forgotten article on agricultural chemistry by Alexander von Humboldt (Ab) 761
A small contribution to the history of crystallization (Ab) 168
Hermann Kopp as an historian (Ab) .. 2139

WADE, F. B. Chemistry as a vocation. A bit of vocational guidance for inquiring high-school pupils (Ar) 1058
WAESER, B. The nitrogen industry at the end of the year 1931 (Ab) 757
WAGNER, E. C. Small fractionating columns as standard equipment for the student organic laboratory (Ar) 320
WAGNER, E. C., J. K. SIMONS AND—. Comparison of eight types of small fractionating columns from the viewpoint of usefulness in the student laboratory of organic chemistry (Ar) 122
WAHLIG, W., W. HERBERT AND—. A new leveling vessel for producing constant pressure in gas analytical investigations (Ab) 160
WAILES, R. B. Carbon dioxide (Ab) 1834
Experiments with gas (Ab) 2133
Experiments with oxygen (Ab) 1660
Experiments with sulfur (Ab) 1999
Industrial stunts for the home chemists (Ab) 1660
Making a chemical harmonica (Ab) 1302
WALDEN, P. Wilhelm Ostwald (Ab) 1304
WALKER, E., R. E. DUNBAR AND—. The chemistry bulletin board (Ar) 510
WALKER, F. Geoffrey Chaucer and alchemy (Ar) 1378
WALLACE, G. Modern processes in wool dyeing (Ab) 570
WALTERS, R. Plans of the Progressive Education Association (Ab) 1838
WARE, G. C. A device for trapping offensive gases (Ar) 1475
WARE, G. C., E. C. GILBERT AND—. Student accuracy in the physical-chemical laboratory (Ar) 103
WARE, J. C. *Analytical chemistry. A textbook for a one-year course in qualitative and quantitative analysis* (B) 195
WARREN, W. D. An ionic explanation of the separation of the cations of the tin subgroup with the reagent sodium hydroxide (C) 1486
WATSON, D. L. Breaking the world's radium monopoly (Ab) 1128
Exploring the extremes of temperature (Ab) 372
WATSON, K. M., O. A. HOUGEN AND—. *Industrial chemical calculations* (B) 605
WEART, E. L. The first synthetic dye (Ab) 1664
WEAVER, E. C. Electricity in the laboratory (Ar) 142
WEBB, H. A. How the last two elements were found (Ab) 2141
WEEDON, D. R. Improved methods of water purification aid textile industry (Ab) 569
WEEKS, M. E. The discovery of the elements (Ar) Foreword 3
I. Elements known to the ancient world 4
II. Elements known to the alchemists. 11
III. Some eighteenth-century metals... 22
Correction (C) 2127
IV. Three important gases 215
Correction (C) 1122, 1296
V. Chromium, molybdenum, tungsten, and uranium 459
VI. Tellurium and selenium 474
VII. Columbium, tantalum, and vanadium 863
Correction (C) 1658
VIII. The platinum metals 1017
IX. Three alkali metals: potassium, sodium, and lithium 1035
X. The alkaline earth metals and magnesium and cadmium 1046
XI. Some elements isolated with the aid of potassium and sodium: zirconium, titanium, cerium, and thorium... 1231
Correction (C) 1657
XII. Other elements isolated with the aid of potassium and sodium: beryllium, boron, silicon, and aluminum... 1386
Correction (C) 1659
XIII. Some spectroscopic studies 1413
Correction (Ar) 2078
XIV. The periodic system of the elements 1593
XV. Some elements predicted by Mendeléeff 1605
XVI. The rare earth elements 1751
XVII. The halogen family 1915
XVIII. The inert gases 2065
Aluminum statue of Charles M. Hall (C) 1659
Paracelsus and the discovery of hydrogen (C) 1296
Sweden (C) 2127
Thallium (Ar) 2078
Vanadium (C) 1658
WEIDLEIN, E. R. AND W. A. HAMOR. *Science in action* (B) 191
WEIGEL, W. M. New quicksilver discoveries (Ab) 759
Vast raw material resources await chemical development (Ab) 1836
WEISSELBERG, A. Factors that influence dryer performance (Ab) 2001
WELBORN, M. C. The errors of the doctors according to Friar Roger Bacon of the minor order (Ab) 2138
WELLMANN, M., K. FREDENHAGEN AND—. The corrosive action of hydrogen fluoride and its antidotes (Ab) 2000
WENDT, G. Theodore William Richards (C) 366, 559
WERNIMONT, G. Balancing chemical equations (C) 1124
WEST, C. J., *editor. Annual survey of American chemistry, Vol. VI, 1931* (B) 1842
WEST, C. J. AND D. D. BEROLZHEIMER. *Bibliography of bibliographies on chemistry and chemical technology. Second supplement, 1929–31* (B) 970
WEST, C. J. AND C. HULL. Doctorates in chemistry and related fields conferred by American universities, 1930–31. Correction (C) 154
Doctorates in chemistry and related fields conferred by American universities, 1931–32 (Ar) 1976
WEST, C. J., C. HULL AND—. The eighth census of graduate research students in chemistry, 1931 (Ar) 1472
WESTER, D. H. Goethe's relation to chemistry—in memory of the one hundredth anniversary of his death (Ab) 1304
WESTON, W. Vitamin chart (Ab) 946
WEYGAND, C. *Quantitative analytische Mikromethoden der organischen Chemie in vergleichender Darstellung* (B) 400
WHALLEY, H. C. S. DE—. *See*, DE WHALLEY, H. C. S., this index.
WHITE, A. M. AND H. B. FRIEDMAN. On the discovery of palladium (Ar) 236
WHITE, N. I. Teaching versus research (Ab) 1308
WHITE, W. C., C. P. BAKER AND—. Chemical engineering on the coöperative plan at Northeastern University (Ar) 894
WHITEHEAD, T. H. The equilibrium relations in a water solution of cupric bromide (Ar) 1457
WHITING, C. Theodore William Richards (C) 365
WHITMORE, F. C., *editor-in-chief. Organic syntheses, Vol. XII* (B) 1670
WILDMAN, E. A. Modern conceptions and the teaching of general chemistry (Ar). 92

WILLARD, M. L., E. W. BLANK AND—. Micro-molecular-weight determination by vapor-density methods (Ar)..... 1819
WILLIAMS, J. A. Teacher training primarily a state function (Ab)..... 1838
WILLIAMS, R. J. AND C. M. TYMAN. Neutral standard for hydrogen-ion work and accurate titrations which can be prepared in one minute (Ab)..... 1662
WILLIS, B. Radioactivity and theorizing (Ab)..... 1663
WILLIS, H. H. Textile testing laboratory has demonstrable value (Ab)..... 570
WILLSTÄTTER, R. Hundred years of Liebig's *Annalen der Chemie* (Ab)..... 1304
WILSON, O. Our greatest decade in chemical manufacture (Ab)..... 1663
WINDERLICH, R. The Woulfe bottle (Ab) 2141
WINTERHALDER, E. The quantitative decomposition of lead dioxide (Ab)..... 1835
WOLF, A. The teaching of the history of science in the University of London (Ab)..... 372
WOODBURN, H. M. The gold-maker (Ar). 1783
WOODMAN, R. M. The evaluation of sulfur suspensions used in spraying (Ab). 2001
WOODWARD, H. E., E. V. HJORT AND—. Micro methods in general chemistry (Ar)..... 1815
WORRALL, D. E. Some modern developments of organic chemistry (Ab)..... 1128
WORSTELL, R. A. On ozone (Ar)..... 291
WORTHINGTON, R. Nickel tubing resists fatigue (Ab)..... 1491
WRIGHT, E. C. AND K. E. LUGER. Where stainless alloys stand in chemical construction (Ab)..... 2137
WRIGHT, J. G. E. Alkyd resins developed into new forms (Ab)..... 2001
WU, LU-CH'IANG, T. L. DAVIS AND—. T'ao Hung-Ching (Ar)..... 859
WUNDERLICH, R. Calcium carbide (Ab).. 1834
WYLIE, H. B. A plan for prevention of crowding in special apparatus rooms (Ar)..... 2090

YOHE, G. R. AND M. T. YOHE. New laboratory preparations for the course in organic chemistry. III. Dibutyl ether from butanol-1 (Ar)..... 1268
YOUNG, O. D. Examinations in the university of life (Ab)..... 573

ZEISHOLD, H. Theodore William Richards (C)..... 559
ZUPPKE, M. The purification of mercury (Ab)..... 1834

Abel, authority on glandular secretions, chosen new president of scientists (CN) 584
Abel, John J.—(P) 584
Ability. Book—. B. A. SOULE ((Ar) .. 1940
Absorption tube for the determination of hydrogen in organic substances by the micro-analytical method of Pregl. A modified—. W. J. BOYD AND W. ROBSON (Ab) 367
Abstractors of the JOURNAL OF CHEMICAL EDUCATION. Directions for— 561
Academies. Statistics of private high schools and—1929–30 (B) 970
Accuracy of certain physico-chemical experiments. R. J. DEGRAY (Ar) 903
Acetic acid industry. Developments in the—. M. SCHOFIELD (Ab) 1303
Acetone from acetic acid. The catalytic preparation of—. C. D. KOCHAKIAN (Ar) 1649
Achievement. Significant actions and criteria of—. ANON. (Ab) 574
Achievements of students of general chemistry in college. A study of the—. W. J. BRAY (Ab) 2142
Acids. Chinese to make—(S) 316
Acids and bases. The modern theory of—. J. E. CAVELTI (Ab) 760
Acids damage paper. Federal chemists show how—(S) 2031
Activated carbon. Recent developments in—. M. SCHOFIELD (Ab) 568
Adaptation of the Bunsen burner to natural gas. G. R. ROBERTSON (Ar) 1963
Adapting elementary chemistry to girls' interests. A. LEVESCONTE (Ar) 1620
Adding interest and reality to qualitative analysis. H. C. GRAHAM (Ar) 1225
Adjustable apparatus stand and truck. An—. R. W. SHAW (Ab) 2133
Administration of chemistry in state teachers' colleges. The—. T. C. HERNDON (Ar) 1448
Administrative practices affecting classroom teachers (Ab) 1308
Adsorption isotherm, The—? S. CASPE (Ar) 907
Advancement of teaching. The—. W. B. MUNRO (Ab) 950
Advances in the teaching of chemistry since 1914. F. B. DAINS (Ar) 745
Advertising. Applied analytical chemical research necessitates promotional—. G. F. SMITH (Ar) 84
Advertising. Vitamin—may mislead public, says chemist (S) 167
Agricola, Georgius—(P) 9
Agricultural biochemistry. Introduction to—. R. A. DUTCHER AND D. E. HALEY (B) 788
Agricultural chemistry by Alexander von Humboldt. A forgotten article on—. E. O. VON LIPPMANN (Ab) 761
Agriculture. The changing outlook in—. E. J. RUSSEL (Ab) 370
Aid to instruction in chemistry. The Reader's Guide as an—. A. J. HAMMER (Ar) 1943
Aims of a college course in science. The—. A. A. BLESS (Ar) 889
Air. Water and—*See*, Living in a world of science. M. MEISTER (B) 397
Air drier for analytical balances. A new—. E. LÖWENSTEIN (Ab) 1127
Air-conditioning with particular reference to the chemical field. Rise of—. W. L. FLEISHER (Ab) 368
Alarm for use in gas absorption. An automatic—. T. H. VAUGHN (Ar) 528
Albert the Great: his scientific views. T. GREENWOOD (Ab) 2140
"Alchemist with Assistant" by Heerschop (F). *See*, opp. p. 971
Alchemist, The—by David Teniers, the Younger (F). *See*, opp. pp. 201, 1139, 1315; *see also* p. 18
Alchemy and the alchemistic cosmogony of Theophrastus Paracelsus. The—... F. STRUNZ (Ab) 2140
Alchemy to chemistry in the Museum of Science and Industry, Chicago. From—(CN) 168
Alchemy. Geoffrey Chaucer and—. F. WALKER (Ar) 1378
Alchemy, Note of the Arabic mss. on—in the Asaflyah Library, Hyderrâbâd (Deccan), India. H. E. STAPLETON (Ab) 2140
Alchemy—*See*, The discovery of the elements. II. M. E. WEEKS (Ar) 11
"Alchimist, Der—" by Thomas Wijck (F). *See*, opp. pp. 1501, 1843, 2010
"Alchymist, The—" by van Ostade (F). *See*, opp. p. 1673
"Alchymistenwerkstatt" by David Teniers, the Younger (1610–90) (F). *See*, opp. p. 1315
Alcohol. Mixing gas and—. (Ab) 2134
Alcohol. The catalytic decomposition of ethyl—. H. E. MORRIS (Ar) 1730
Alcohol. The story of—. C. C. PINES (Ab) 567
Alexander Smith as an educator. J. KENDALL (Ar) 254
Alexander Smith, the investigator. R. H. MCKEE (Ar) 246
Aliphatic solvents industry, 1931. The—. ANON. (Ab) 758
Alkali cyanides in industry. ANON. (Ab) 568
Al-Kamily. Mansur—. E. J. HOLMYARD (Ab) 760
Alkyd resins developed into new forms. J. G. E. WRIGHT (Ab) 2001
Allotropy, Experiments in—. I. Arsenic and iron allotropes. E. W. BLANK (Ab) 1999
Alloys. Modern nitric acid production demands special—. T. MCKNIGHT (Ab) 2136
Alloys in quantitative analysis. Silver-bismuth—. G. W. BATCHELDER AND L. C. HURD (Ar) 929
Alloys needed to meet different corrosion problems. Different—(S) 190
Alloys should find wider applications. Precious—(S) 146
Alloys, Where stainless—stand in chemical construction. E. C. WRIGHT AND K. E. LUGER (Ab) 2137
Alpha Chi Sigma award at the University of Arkansas (CN) 956
Alpha Chi Sigma fraternity. New chapter of—(CN) 599
Aluminum statue of Charles M. Hall. The—. Correction (C) 1659
Aluminum utility exemplified in a modern research laboratory. W. S. MCARDLE (Ar) 834
Aluminum. A new qualitative test for—. K. KERSHNER AND R. D. DUFF (Ar) .. 1271
Aluminum from the JOURNAL OF CHEMICAL EDUCATION. Selected bibliography on—(S) 1273
Aluminum jewelry. Something new:—. C. M. HOKE (Ab) 2135
Aluminum—*See*, The discovery of the elements. XII. M. E. WEEKS (Ar) 1396
America. History of chemical education in—Symposium 667–750
American Association for the Advancement of Science and associated societies. The Syracuse meeting of the—. C. F. ROOS (Ab) 2004
American Association for the Advancement of Science, The—. Report of the New Orleans meeting. ANON. (Ab). 763
American Association of University Professors. Investigation of college teaching by the—(CN) 384
American Association of University Women. Graduate fellowships of the—(CN) 383

American Association of University Women. Scholarship offered by—(CN) 181
American Chemical Society honors Dr. Charles L. Parsons (CN) 951
American Chemical Society membership awarded to Herrmann, University of Pittsburgh student (CN) 396
American Chemical Society. Program for the educational section of the midwest regional meeting of the—(CN) 930
American Chemical Society. The Denver meeting of the—. C. M. KNUDSON (Ab) 2144
American Chemical Society—*See*, Division of Chemical Education in this index.
American chemistry. Annual survey of—, Vol. VI, 1931. C. J. WEST, *editor* (B) 1842
American college president. The—. H. J. LASKI (Ab) 950
American education during 1931 (CN) ... 594
American general science. An English impression of—. F. W. TURNER (Ab) 2003
American Institute of Chemists Medal awarded Herty (CN) 581
American Institute of Physics (CN) 180
American synthetic yarn industry during 1930. C. E. MULLIN (Ab) 570
Ammonia without distillation. The quantitative determination of—. P. SORS (Ab) 1128
Ammonia. An early experiment of James Woodhouse upon the synthetic production of—. C. A. BROWNE (Ar) .. 1744
Ammonia. Repetition of experiments reported by James Woodhouse in 1808 relative to the production of ammonia. K. S. LOVE AND P. H. EMMETT (Ar) .. 1748
Ammonia liquor as a waste product. Disposing of—. D. V. MOSES AND B. H. MACKEY (Ab) 2001
Ampère. André-Marie—(P) 1929
Analyse, Die chemische—, XXX Band. Rechenverfahren und Rechenhilfsmittel mit Anwendungen auf die analytische Chemie. (W. BÖTTGER, *editor*). O. LIESCHE (B) 1310
Analysis. A course in quantitative—. J. S. GUY AND A. SKEEN (B) 1309
Analysis. A short course in qualitative—. F. E. BROWN (B) 1666
Analysis. Adding interest and reality to qualitative—. H. C. GRAHAM (Ar) .. 1225
Analysis. Analytical chemistry. Vol. I. Qualitative—. F. P. TREADWELL AND W. T. HALL (B) 1309
Analysis. New indicators for volumetric—. W. H. BARRETT (Ab) 1490
Analysis. Notes on Blowpipe—. N. KNIGHT (B) 605
Analysis. Qualitative organic—. O. KAMM (B) 2148
Analysis. Quantitative—. E. G. MAHIN (B) 1667
Analysis. Volumetric—. G. FOWLES (B) 1499
Analysis by X-rays and its applications. Chemical—. G. VON HEVESY (B) ... 1841
Analysis of inorganic substances. A course of qualitative chemical—. O. F. TOWER (B) 967
Analysis with the help of many new reactions. Systematic qualitative—. C. J. VAN NIEUWENBURG (Ab) 1128
Analysis with the spectroscope. Practical—. C. C. NITCHIE (Ab) 368
Analysis—*See*, Modified technic for first group separation. Removal of large amounts of mercurous chloride by sublimation. E. W. BLANK (Ar) 527
Analytical chemical research necessitates promotional advertising. Applied—. G. F. SMITH (Ar) 84
Analytical chemistry at The University of Kansas. The E. H. S. Bailey prize in—(CN) 956
Analytical chemistry. A textbook for a one-year course in qualitative and quantitative analysis. J. C. WARE (B) 195
Analytical chemistry. The beginnings of—. F. A. FILBY (Ab) 1131
Analytical chemistry. Vol. I. Qualitative analysis. F. P. TREADWELL AND W. T. HALL (B) 1309
Analytical chemistry, 1931–32. The J. T. Baker Chemical Company fellowships in—(CN) 177
Analytical factors and their logarithms. E. R. CALEY (B) 967
Anatomy of logic. The—(pathological) (E) 1843
And now the neutron. J. G. CROWTHER (Ab) 1835
Anesthetic found according to prediction. New—(S) 415
Animals die when deprived of rare gases in air (CN) 589
Annalen der Chemie. Hundred years of Liebig's—. R. WILLSTÄTTER (Ab) .. 1305
Annealing laboratory glassware. B. T. EFFINGER (Ab) 1660
Anniversaries occur this year. Many centennial—(CN) 585
Annual reports on the progress of chemistry. 1931. Vol. XXVIII. THE CHEMICAL SOCIETY (London) (B) 1137
Annual review of biochemistry. J. M. LUCK, *editor* (B) 2007
Annual survey of American chemistry. Vol. VI, 1931. C. J. WEST, *editor* (B) 1842
Another experiment in second-year college chemistry. W. R. CARMODY (Ar) ... 1244
Anschütz. The eightieth birthday of Richard—. F. REINDEL (Ab) 1131
Anthracene centenary (Ab) 2141
Anti-bump laboratory glassware (Ab) 1127
Antimony—*See*, The discovery of the elements. II. M. E. WEEKS (Ar) 13
Antiseptic treatment. Lister's—. "A classic of science" (Ab) 571
Apotheker-kalender. 1932 Illustrierter—. F. FERCHL (B) 1500
Apparatus for electrical resistance measurements (B) 1138
Apparatus for illustrating the arc method for the fixation of nitrogen, and also for the formation of ozone. H. C. DOANE (Ar) 1113
Apparatus for maximum or minimum boiling-point study. An—. E. H. BROWN (Ar) 1114
Apparatus for removing glass stoppers from acid bottles. An—. E. R. ROSE (Ar) 149
Apparatus for the determination of carbon dioxide. A. HANAK (Ab) 2131
Apparatus for the determination of the volume relationship in the synthesis of water vapor. H. PETZOLD AND R. SCHARP (Ab) 1997
Apparatus. An improvised Victor Meyer—. I. STONE (Ab) 755
Apparatus. Cooling—. J. HALLER (Ab) 159
Apparatus for distillation of mercury. A simple—. M. KLEIBER (Ab) 1127
Apparatus for the physics class. Homemade—. G. H. HYDE (Ab) 565
Apparatus for the quantitative determination of oxygen. Oxymeter, a new—. K. W. HETZEL (Ab) 1998
Apparatus for use in high-school sciences. List of essential—. T. C. HOLY AND D. H. SUTTON (B) 790
Apparatus rooms. A plan for prevention of crowding in special—. H. B. WYLIE (Ar) 2090
Apparatus stand and truck. An adjustable—. R. W. SHAW (Ab) 2133
Apparatus—*See*, A glass stopper puller. F. R. PRATT (Ab) 2132

Apparent blunder led to new element discoveries (CN) ... 777
Application of the motion picture to the problem of the rising cost of education. The—. B. A. AUGHINBAUGH (Ab) ... 161
Applications of photoelectric cells in chemical engineering. C. J. SMITHELLS (Ab) ... 2002
Applied analytical chemical research necessitates promotional advertising. G. F. SMITH (Ar) ... 84
Appropriations for grants-in-aid by the National Research Council (CN) ... 953
Arabic mss. on alchemy, Note on the—in the Asafiyah Library, Hyderrâbâd (Deccan), India. H. E. STAPLETON (Ab) ... 2140
Arfwedson. Johan August—(P) ... 1755
Argon—*See*, The discovery of the elements. XVIII. M. E. WEEKS (Ar) ... 2069
Arithmetic. Chemical—. S. B. ARENSON (B) ... 604
Arsenic—*See*, The discovery of the elements. II. M. E. WEEKS ... 12
Aspirator trap. A simple—. E. F. DEGERING (Ar) ... 1656
Aspirin. Warning follows fatal mistake of bichloride tablets for—(CN) ... 778
Assays. Psychological—(S) ... 1635
Assistantship, Graduate—available at Georgia School of Technology (CN) ... 599
Assistantships available for 1932–33 at Boston University College of Liberal Arts. Two graduate—(CN) ... 783
Association for the Advancement of Science, The Muslim—(CN) ... 180
Atom builder, The sun an—: a new theory. H. N. RUSSELL (Ab) ... 373
Atom cores. Fourteen points govern building of—(CN) ... 593
Atom. Photographing the birth of an—. W. D. HARKINS (Ab) ... 1662
Atomic and molecular structure models as a visual aid in the teaching of chemistry. A. L. POULEUR (Ar) ... 301
Atomic models for organic chemistry. A new type of—. J. B. ENTRIKIN (Ar) ... 2081
Atomic nuclei. The structure of the—. E. RUTHERFORD (Ab) ... 2135
Atomic weights by Theodore William Richards. Investigations of—. G. S. FORBES (Ar) ... 453
Atomizer for spectral tests. An—. J. MILBAUER (Ab) ... 161
Atoms. Cosmic rays break hearts of—(CN) ... 391
Auer von Welsbach. Baron—(P) ... 1763
Australian plant products. Natural chemical resources of—. Part II. A. R. PENFOLD (Ar) ... 429
Auto of future to demand better lubricants (S) ... 523
Automatic alarm for use in gas absorption. An—. T. H. VAUGHN (Ar) ... 528
Automatic control for vacuum apparatus. C. I. SWAYZE (Ab) ... 2132
Automatic suction and dropping device. E. LÖWENSTRIN (Ab) ... 2131
Automatic valve for a siphon. An—. C. W. TOTTEN (Ar) ... 1831
Award at The University of Arkansas. Alpha Chi Sigma—(CN) ... 956
Award for outstanding scientific achievements. Langmuir wins Popular Science Monthly $10,000 Annual—(CN) ... 770
Award to W. D. Coolidge. The Washington—(CN) ... 955
Award. Pierre and Jenny receive the 1931 Chilean nitrate of soda nitrogen research—(CN) ... 177
Award. Young Harvard chemist gets Langmuir—(CN) ... 951
Awards during 1931. Scientific recognitions and—(CN) ... 584
Away with fancy frills and fads. R. R. TURNER (Ab) ... 371
Bacon, Friar Roger, of the minor order. The errors of the doctors according to—. M. C. WELBORN (Ab) ... 2138
Bailey prize in analytical chemistry at The University of Kansas. The E. H. S.—(CN) ... 956
Baker lectureship in chemistry at Cornell expanded. Non-resident—(CN) ... 782
Baker, The J. T.—Chemical Company fellowships in analytical chemistry, 1931–32 (CN) ... 177
Baking powders. An introductory story of—. O. S. RASK ... 1340
Balances. A new air drier for analytical—. E. LÖWENSTEIN (Ab) ... 1127
Balancing chemical equations (C), 358, 360, 361, 560, 751, 752, 753, 944, 1124, 1125 ... 1299
Balard. Antoine Jérôme—(P) ... 1925
Banks. Lady—(P) ... 218
Banks. Sir Joseph—(P) ... 218
Barium industry. The—. W. TRANTON (Ab) ... 946
Barium—*See*, The discovery of the elements. X. M. E. WEEKS (Ar) ... 1050
Base exchange water softening in the Chicago district. G. BORROWMAN (Ab) ... 569
Bases. The modern theory of acids and—. J. E. CAVELTI (Ab) ... 760
Bases. The quantitative determination of hydroxyl groups in—. W. BARGHEER (Ab) ... 1835
Basis of Einstein relativity theory still stands (S) ... 373
Battery charger supplies current for nickel plating. Small—. R. H. ROGERS (Ab) ... 2133
Baumé, Antoine—(P) ... 1020
B-batteries as student projects. Mirrors and—. H. L. SLICHENMYER (Ar) ... 1648
Beaker holder. Improvised—. B. COONE (Ab) ... 755
Beaumont. Louis Elie de—(P) ... 1404
Becher. Johann Joachim—(P) ... 216
Beddoes. Dr. Thomas—(P) ... 1039
Beginnings of analytical chemistry. The—. F. A. FILBY (Ab) ... 1131
Belgium. Education in—(B) ... 1672
Bendien cancer test called unreliable (CN) ... 182
Benzyl cellulose: a new British plastic (Ab) ... 1128
Bergius. Friedrich—(P) ... 174
Bergius, Bosch, and Warburg. Nobel chemistry and medicine awards for 1931 to—(CN) ... 173
Bergman. Torbern—(P) ... 26
Berthelot. Pierre-Eugène-Marcellin—(P) ... 1933
Berthollet. Claude Louis—(P) ... 637, 1917
Beryllium as a new industrial metal. J. BECKER (Ab) ... 568
Beryllium—*See*, The discovery of the elements. XII. M. E. WEEKS (Ar) ... 1386
Berzelius, Baroness—(P) ... 1760
Berzelius. Jöns Jakob—(P), ... 475, 484, 1610, 1614, 1760, 1763, 1918
Berzelius' publications on catalysis. M. SPETER (Ab) ... 2003
Bibliography of bibliographies on chemistry and chemical technology. Second supplement, 1929–31. C. J. WEST AND D. D. BEROLZHEIMER (B) ... 970
Bibliography of research studies in education: 1929–30 (B) ... 200
Bibliography on aluminum from the JOURNAL OF CHEMICAL EDUCATION. Selected—(S) ... 1273
Bichloride tablets for aspirin. Warning follows fatal mistake of—(CN) ... 778
Biennial survey of education in the United States, 1928–30 (B) Vol. 1. Chap. III. Secondary education ... 606
Vol. 1. Chap. IV. Industrial education ... 792

Vol. 2. Chap. III. Statistics of city school systems, 1929–30 2010
Bimolecular reaction for the physical chemistry laboratory. An experiment on a—. C. B. HURD (Ar) 513
Biochemistry. Annual review of—. J. M. LUCK, *editor* (B) 2007
Biochemistry. Introduction to agricultural—. R. A. DUTCHER AND D. E. HALEY (B) 788
Biographical accounts on Edgar Fahs Smith, appearing since 1928 (Ar) 665
Biographical material into science courses. A plan for introducing—. J. H. SAMMIS (Ar) 900
Biological and premedical students. Physical chemistry. An elementary text primarily for—. L. J. GILLESPIE (B) 196
Biological chemistry. Some recent advances in—. R. A. DUTCHER (Ar) .. 1365
Biot. Gay-Lussac and—(P) 1391
Bismuth—*See*, The discovery of the elements. II. M. E. WEEKS (Ar) 15
Bitter chemical, Inability to taste—is hereditary (S) 245
Black. Joseph—(P) 221
Black. Lavoisier, Priestley, and—. J. BELL (Ab) 2140
Blasting without explosives: a new job for carbon dioxide. F. H. KNEELAND (Ab) 2133
Blood test for cancer developed by Fuchs. New—(CN) 389
Blowpipe analysis. Notes on—. N. KNIGHT (B) 605
Boilers. Faraday and marine—. ANON. (Ab) 571
Boiling-point study. An apparatus for maximum or minimum—. E. H. BROWN (Ar) 1114
Boisbaudran. Lecoq de—(P) 1605
Bolton. H. C.—(P) 721, 739
Bones with acids. On the early history of calcium acid phosphate and the decomposition of—. M. SPETER (Ab) .. 1132
Book ability. B. A. SOULE (Ar) 1940
Book bindings. A method for the preservation of—. J. P. SANDERS (Ab) 2135
Book of chemical labels (B) 2150
Bookkeeping in lending articles from the laboratory storeroom. A system for eliminating—. C. W. TOTTEN (Ar) 1252
Booth. James C.—(P) 714
Borodin. Alexander—(P) 153
Borodin, Alexander—: chemist and musician. H. BERNHARD (C) 153
Boron—*See*, The discovery of the elements. XII. M. E. WEEKS (Ar) ... 1389
Borrowed processes (Ab) 1836
Bosch. Carl—(P) 174
Bosch, and Warburg. Nobel chemistry and medicine awards for 1931 to Bergius,—(CN) 173
Boston University College of Liberal Arts. Two graduate assistantships available for 1932-33 at—(CN) 783
Boy Scout movement. Chemistry and the—(CN) 583
Boyé. Martin H.—(P) 714
Boyle. Robert—(P) 19
Boyle, Robert, and his influence on thought in the seventeenth century. J. F. FULTON (Ab) 2138
Boyle's conception of element compared with that of Lavoisier. T. L. DAVIS (Ab) 760
Brauner. Bohuslav—(P) 1601
Breaking the world's radium monopoly. D. L. WATSON (Ab) 1128
Brewster. Sir David—(P) 1416
Brief account of glue and its place in industry. A—. H. B. SWEATT (Ar) .. 1553
Britain. Roman mining in—. ANON. (Ab) 1305
British Association holds symposium on evolution of universe (CN) 179
British Association centenary. Commemorative service for the—(CN) ... 178
British Association for the Advancement of Science. Chemistry at the centenary (1931) meeting of the—(B) .. 969
British chemical industry. A history of the—. S. MIALL (B) 787
British chemical industry in 1931. A review of the—. J. D. PRATT (Ab) 758
British report most potent form of vitamin D yet known (S) 852
Broadcast supplement of *The Nucleus*—*See*, Chemistry of today (B) 792, 970
Bromine—*See*, The discovery of the elements. XVII. M. E. WEEKS (Ar) 1924
Brown. Samuel—(P) 1847
Brownian movement—*See*, Experiments in microscopy. E. W. BLANK (Ab) .. 2133
Buffalo. The tutorial plan at—. H. W. POST (Ab) 2142
Building at The Phillips Exeter Academy. New science—. W. SEGERBLOM (CN) 766
Bulletin board. The chemistry—. R. E. DUNBAR AND E. WALKER (Ar) 510
Bunsen. Robert Wilhelm—(P).1416, 1420, 1421
Bunsen burner. A Chinese prototype of the—. E. CZAKÓ (Ab) 165
Bunsen burner, Adaptation of the—to natural gas. G. R. ROBERTSON (Ar) 1963
Bureau. A chemistry teachers' service—. J. O. FRANK AND T. O. JONES (Ar) ... 1255
Burgess receives Perkin Medal (CN) 383
Burgess. C. F.—(P) 383
Burgess. George Kimball—. ANON (Ab) . 1837
Burns. U. S. X-ray standard lessens danger of—(CN) 181
Business. The consulting chemist and your—(B) 402
Bussy. Antoine Alexandre Brutus—(P) .. 1051

Cadmium—*See*, The discovery of the elements. X. M. E. WEEKS (Ar) 1053
Calcium. The detection of strontium in the presence of—. A. W. AVENS AND M. J. MURRAY (Ar) 522
Calcium in the presence of strontium. Color detection of—. F. L. HAHN (Ab) 1661
Calcium—*See*, The discovery of the elements. X. M. E. WEEKS (Ar) 1046
Calcium acid phosphate and the decomposition of bones with acids. On the early history of—. M. SPETER (Ab) 1132
Calcium carbide. R. WUNDERLICH (Ab) 1834
Calculating the proportions of various substances of known composition to give a mixture of definite composition. A simple method for—. H. V. HOUSEMAN (C) 941
Calculations. Chemical—. J. S. LONG AND H. V. ANDERSON (B) 968
Calculations. Industrial chemical—. O. A. HOUGEN AND K. M. WATSON (B) .. 605
Caldwell. G. C.—(P) 721
California cities during 1930–31. Research projects of the secondary-school level carried on in—. F. C. TOUTON (Ab) 371
Can the summer session extend its service beyond the teacher? (E) 201
Canal rays. Lecture experiment for the demonstration of the energy of—. E. BADEREN (Ab) 156
Cancer. Growth-controlling extract being tried in—(S) 451
Cancer. Possible hormone from spleen may control—(CN) 568
Cancer developed by Fuchs. New blood test for—(CN) 389
Cancer of digestive tract. Lists eight forerunners of—(S) 606
Cancer research. Some chemical aspects of—. E. MCDONALD (Ar) 820
Cancer research. Study suggests new line of—(CN) 183
Cancer test called unreliable. Bendien—(CN) 182

Carbon black production in the Monroe gas field. EDIT. STAFF REPORT (Ab) 1836
Carbon compounds in general chemistry. A. J. CLARK (Ar) 99
Carbon. Recent developments in activated—. M. SCHOFIELD (Ab) 568
Carbon—*See*, The discovery of the elements. I. M. E. WEEKS (Ar) 9
Carbon dioxide. R. B. WAILES (Ab) 1834
Carbon dioxide. Apparatus for the determination of—. A. HANAK (Ab) 2131
Carbon dioxide. Blasting without explosives: a new job for—. F. H. KNEELAND (Ab) 2133
Carbon dioxide. Conversion of solid to liquid or gaseous—(Ab) 158
Carbon dioxide in laboratory technic. Solid—. D. H. KILLEFFER (Ab) 755
Carbon monoxide. A simple set-up for making water gas, generator gas, and—. W. FLÖRKE (Ab) 1833
Carbon monoxide in the presence of iron and iron oxides. Decomposition of—. P. RISCHBIETH (Ab) 157
Careers from leisure (S) 1473
Caro, N., The sixtieth birthday of—(Ab) 164
Carothers tells how new synthetic rubber was achieved (CN) 591
Carpet industry. The place of chemistry in the—. G. E. HOPKINS (Ab) 2143
Carrot pigments, Ultra-violet light changes—into vitamin A. V. COFMAN (Ab) 1835
Cartwright, M. Angela—(E) 1141
Casein as a basis for a plastics industry. K. HAUPT (Ab) 1662
Cashing a potentiality (E) 1845
Catalysis. P. K. FROLICH (Ab) 756
Catalysis. Berzelius' publications on—. M. SPETER (Ab) 2003
Catalysis. Heterogeneous—. J. A. MITCHELL (Ar) 261
Catalysis. Quantitative experiments in elementary chemistry. II. A measure of—. R. D. BILLINGER (Ar) 144
Catalysis. Some aspects of—. J. ALEXANDER (Ar) 2026
Catalyst in chemical reactions. Nickel as a—. P. SABATIER (Ab) 1130
Catalytic action of manganese dioxide on the decomposition of potassium chlorate and the measurement of the products of the reaction. An experiment to show the—. J. E. MACKENZIE (Ar) 1111
Catalytic action of surfaces. The—. J. E. NYROP (Ab) 163
Catalytic decomposition of ethyl alcohol. The—. H. E. MORRIS (Ar) 1730
Catalytic preparation of acetone from acetic acid. The—. C. D. KOCHAKIAN (Ar) 1649
Catalytic reactions. Organic—. J. A. MITCHELL (Ar) 59
Cavendish. Henry—(1731–1810) (Ab) 164
Cavendish. Sir Henry—(P) 217
Cell (1800). The discovery of the electric—. G. SARTON (Ab) 761
Cellophane as a substitute for mica. W. E. HAMMOND (Ab) 2133
Cellophane—*See*, Transparent wraps (Ab). 2135
Cells whirled at high speed. Microscope sees what happens to—(CN) 186
Cellulose, Benzyl—: a new British plastic (Ab) 1128
Cellulose, Tiny balls of—seen as units of structure (S) 319
Cellulose fiber. Microscopy of the cotton—. R. N. TITUS, C. J. STAUD, AND HARRY LEB. GRAY (Ar) 114
Correction (C) 1296
Cellulose to lignin in wood. The relation of—. K. FREUDENBERG (Ar) 1171
Cements. Types, uses, and testing of refractory—. W. R. KERR (Ab) 1663
Census of graduate research students in chemistry, 1931. The eighth—. C. HULL AND C. J. WEST (Ar) 1472
Centenaries in 1932. Scientific—. ANON. (Ab) 762
Centenary (1931) Meeting of the British Association for the Advancement of Science. Chemistry at the—(B) 969
Centennial anniversaries occur this year. Many—(CN) 585
Central High School of Philadelphia, and the Franklin Institute of Pennsylvania. Notes on the early teaching of chemistry in the University of Pennsylvania, the—. J. S. HEPBURN (Ar) 1576
Ceramics and chemistry. P. C. KINGSBURY (Ar) 795
Ceria—*See*, The discovery of the elements. XVI. M. E. WEEKS (Ar) 1753
Cerium—*See*, The discovery of the elements. XI. M. E. WEEKS (Ar) 1237
Certain problems of the machine age and their educational implications. H. S. MOORE (Ab) 1306
Cesium—*See*, The discovery of the elements. XIII. M. E. WEEKS (Ar) 1418
Chandler. C. F.—(P) 721, 735
Chandler and Nichols Medals. Conant awarded—(CN) 579
Change. Chemical—. D. B. BRIGGS (B) 786
Changing outlook in agriculture. The—. E. J. RUSSEL (Ab) 370
Chaptal. Jean Antoine Claude—(P) 1923
Chaptal. Jean Antoine Claude—(1756–1832) (Ab) 2138
Chapter in historical chemistry. A—. E. F. SMITH (Ar) 635
Character education. Training teachers for—. H. NEUMANN (Ab) 1308
Charger supplies current for nickel plating. Small battery—. R. H. ROGERS (Ab) 2133
Charles and Julia Henry Fund Scholarships for British and American students (CN) 782
Chart. An improved indicator—(Ab) 1664
Chart. Temperature comparison—. T. C. PATTON (Ar) 1110
Chart. Vitamin—. W. WESTON (Ab) 946
Chart of the elements. A "living" periodic—. H. H. FILLINGER (Ar) 1807
Chaucer. Geoffrey—(P) 1379
Chaucer, Geoffrey—, and alchemy. F. WALKER (Ar) 1378
Chemical age. Recent developments in a—. A. L. FERGUSON (Ar) 1181
Chemical analysis by X-rays and its applications. G. VON HEVESY (B) 1841
Chemical arithmetic. S. B. ARENSON (B) 604
Chemical calculations. J. S. LONG AND H. V. ANDERSON (B) 968
Chemical calculations. Industrial—. O. A. HOUGEN AND K. M. WATSON (B) 605
Chemical change. D. B. BRIGGS (B) 786
Chemical constitution of wool and silk. C. E. MULLIN AND H. L. HUNTER (Ab) 570
Chemical curiosity. A—. H. W. MATZKE (Ar) 1259
Chemical development. Vast raw material resources await—. W. M. WEIGEL (Ab) 1836
Chemical education has part in American Vocational Association program (CN) 190
Chemical education in America from the earliest days to 1820. L. C. NEWELL (Ar) 677
Chemical education. Eastern New York section, A. C. S., plans symposium on—(CN) 960
Chemical education in America. History of—symposium 667, 750
Chemical education in America between the years 1820 and 1870. The history of—. C. A. BROWNE (Ar) 696
Chemical education in the United States from 1870 to 1914. The history of—. H. HALE (Ar) 729

Chemical Education, American Chemical Society. Decennial meeting, Division of—. J. N. SWAN (Ar) 670
Chemical Education, Division of—*See*, Division of Chemical Education in this index.
Chemical encyclopædia. C. T. KINGZETT (B) 2008
Chemical engineering on the coöperative plan at Northeastern University. C. P. BAKER AND W. C. WHITE (Ar) 894
Chemical engineering. Applications of photoelectric cells in—. C. J. SMITHELLS (Ab) 2002
Chemical engineering. Developments in—. H. W. CREMER (Ab) 758
Chemical engineering. Unit processes and principles of—. J. C. OLSEN (B) 1840
Chemical engineers, Educating—in the southwest. O. M. SMITH (Ab) 1838
Chemical hazards in fire-fighting. L. K. ARNOLD (Ar) 1523
Correspondence 2127
Chemical label book. Titles for a—. COMMITTEE REPORT (Ar) 344
Chemical research: a factor of prime importance in American industry. C. M. A. STINE (Ar) 2032
Chemical Society (London)—*See*, Annual reports on the progress of chemistry, 1931. Vol. XXVIII (B) 1137
Chemical study of hormones may lead to new medicines (S) 348
Chemie und chemische technologie tierischer Stoffe: ein Einführung in die angewandte Zoöchemie. G. GRASSER (B) 199
Chemie in Jena von Rolfinck bis Knorr (1629–1921). Die—. F. CHEMNITIUS (B) 969
Chemische Analyse, Die—XXX Band. Rechenverfahren und Rechenhilfsmittel mit Anwendungen auf die analytische Chemie. (W. BÖTTGER, *editor*.) O. LIESCHE (B) 1310
Chemist and food. The—. L. H. LAMPITT (Ab) 1129
Chemist at Oxford. A—. J. S. CHAMBERLAIN (Ab) 1134
Chemist to his love. The—(S) 146
Correction 366
Chemistry and the Boy Scout movement (CN) 583
Chemistry and the dental profession. C. S. GIBSON (Ab) 2002
Chemistry and the quest for health. O. KAMM (Ar) 1719
Chemistry as a vocation. A bit of vocational guidance for inquiring high-school pupils. F. B. WADE (Ar) 1058
Your start toward an industrial job in chemistry. H. W. RHODEHAMEL (Ar) 1062
Chemistry at Nebraska. F. W. UPSON (Ab) 1664
Chemistry at the centenary (1931) meeting of the British Association for the Advancement of Science (B) 969
Chemistry bulletin board. The—. R. E. DUNBAR AND E. WALKER (Ar) 510
Chemistry exhibit. A—. H. W. BAKER AND L. I. PHARES 501
Chemistry in high school and university. G. MCP. SMITH (Ab) 161
Chemistry in the college curriculum of the premedical student. R. I. GRADY (Ar) 111
Chemistry in the service of man. A. FINDLAY (B) 1135
Chemistry of food and nutrition. H. C. SHERMAN (B) 1671
Chemistry of the saccharides. H. PRINGSHEIM (B) 1312
Chemistry of the stars. The—. W. K. GREEN (Ab) 163
Chemistry of today (B) 792, 970
Chemistry teacher and service courses in the land-grant college. The—. R. E. KIRK (Ar) 538
Chemistry teachers' service bureau. A—. J. O. FRANK AND T. O. JONES (Ar) ... 1255
Chemistry workbook and laboratory guide. M. V. MCGILL AND G. M. BRADBURY (B) 193
Chemistry. An elementary study of—. W. MCPHERSON AND W. E. HENDERSON (B) 2145
Chemistry. General—. L. B. RICHARDSON (B) 1494
Chemistry. General—. E. P. SCHOCH AND W. A. FELSING (B) 601
Chemistry. How to understand—. A. F. COLLINS (B) 1496
Chemistry. Industrial—. A. ROGERS (B) 786
Chemistry. Inorganic—. T. M. LOWRY (B) 785
Chemistry. Outlines of theoretical—. F. H. GETMAN AND F. DANIELS (B) .. 602
Chemistry. Principles of—. J. H. HILDEBRAND (B) 1495
Chemistry. Principles of—. J. H. ROE (B) 2005
Chemistry Teachers' Club of New York. Joint meeting of the Physics Club of New York and the—(CN) 781
Chemists. Need of a broader vision among—. J. READ (Ab) 372
Chemists. Statistical data concerning German—1925 (Ab) 166
Chemists, Too many—? (Ab) 371, 574
Chenevix. Richard—*See*, On the discovery of palladium. A. M. WHITE AND H. B. FRIEDMAN (Ar) 236
Chevreul, Eugene—historian of chemistry. H. METZGER (Ab) 2139
Child and science, The—: symposium (Ab) 372
Chilean nitrate of soda nitrogen research award. Pierre and Jenny receive the 1931—(CN) 177
Chinese prototype of the Bunsen burner. A—. E. CZAKÓ (Ab) 165
Chinese to make acids (S) 316
Chloramine-T. An improved method of halogen-ion separation and detection by means of—. E. M. GERSTENZANG (Ar) 318
Chloramine-T method of halogen-ion detection. An improvement on the—. S. SUSSMAN (Ar) 1652
Chlorine—*See*, The discovery of the elements. XVII. M. E. WEEKS (Ar) 1915
Chloroform. Samuel Guthrie, Jr. (1782–1848) in commemoration of the centenary of the discovery of—. T. L. DAVIS (Ab) 769
Choosing and using materials for chemical plant construction. W. S. CALCOTT AND T. R. OLIVE (Ab) 2135
Chrome alum. The preparation and preservation of large crystals of—. L. J. FLIEDNER (Ar) 1453
Chromium coats improve U. S. rifles (S) .. 499
Chromium plating. The status of—. W. BLUM (Ab) 1130
Chromium—*See*, The discovery of the elements. V. M. E. WEEKS (Ar) 467
Clamps for ring stands. Insulated—. G. NADLER (Ab) 565
Clarke. Frank Wigglesworth—(P) 729
Class periods. The length of—. J. B. PAUL (Ab) 1307
Class-size upon the efficiency of instruction. Effect of—. J. H. H. SMITH (Ab) 2142
Classes. Organization of freshman chemistry—. O. M. SMITH (Ar) 1946
Classics of science (Ab):
Early steps in photography. (WEDGWOOD, HERSCHEL, AND EASTMAN) 1305
Errors in our food economy. (ATWATER) 1132
From gas to liquid. (ANDREWS) 1837
Heat of the spectrum. (HERSCHEL) .. 761
Lister's antiseptic treatment 571

Magnetism from the electric current. (OERSTED) ... 1132
Nitrogen and phosphorus (BOYLE, LAVOISIER, AND PRIESTLEY) ... 2140
Predicting undiscovered elements. (MENDELÉEFF) ... 371
Rocks tell how they are formed. (SORBY) ... 762
Some elements yielded by yttrium. (MARIGNAC AND CLEVE) ... 370
The first morphine (SERTURNER) ... 2140
Three common elements in group IV ... 2140
Classroom teachers. Administrative practices affecting—(Ab) ... 1308
Class-size standards at the college level. E. HUDELSON (Ab) ... 1307
Cleaning platinum ware. A. SATTLER (Ab) 1660
Cleansing. Silicates in—. ANON. (Ab) .. 369
Cleaveland. Parker—(Ab) ... 571
Cleaveland. Parker—(F). *See*, opp. p. 403; (P) *See also* ... 692
Cleve. Per Theodor—(P) ... 1761, 2073
Clubs. High-school—. R. S. ELLWOOD (Ab) ... 763
Clubs. High-school science—. L. A. ASTELL AND C. W. ODELL (B) ... 1314
Clubs in the high school. Organization of science—. D. D. PETTIT (Ar) ... 1260
Coal. Germs had part in making—(CN) 187
Coal. Present-day knowledge of—. H. A. CURTIS (Ab) ... 1999
Coal. The future development of—. W. R. ORMANDY (Ab) ... 370
Coal. The production of oil from—. L. J. ROGERS (Ab) ... 163
Coal, color and constitution. H. E. ARMSTRONG (Ab) ... 2144
Coal-tar distillation by hot gas at the coke oven plant. G. E. MCCLOSKEY (Ab) 1663
Cobalt—*See*, The discovery of the elements. III. M. E. WEEKS (Ar) ... 23
Code system for dispensing qualitative analysis unknowns. A new—. A. L. TAYLOR (Ar) ... 1811
Coke oven plant. Coal-tar distillation by hot gas at the—. G. E. MCCLOSKEY (Ab) ... 1663
College and university teaching. H. L. DODGE (Ab) ... 949
College and university teaching. ANON. (Ab) ... 1493
College course in methods of teaching science. A—. V. GEGENHEIMER (Ar) 1439
College president. The American—. H. J. LASKI (Ab) ... 950
College teaching by the American Association of University Professors. Investigation of—(CN) ... 384
Colloid chemistry. Some of the fallacies of—. T. L. KELLY (Ab) ... 572
Colloidal media. Physico-chemico processes in—. E. S. HEDGES (Ab) ... 946
Colloidal solutions. Pectography and the constitution of—. E. S. HEDGES (Ab) 946
Colloids. Solubility problem of—. E. S. HEDGES (Ab) ... 2134
Color detection of calcium in the presence of strontium. F. L. HAHN (Ab) ... 1661
Color in slide-making. The use of—. G. E. ESTES (Ab) ... 1490
Color and constitution. Coal,—. H. E. ARMSTRONG (Ab) ... 2144
Colorimeter especially designed for the colorimetric estimation of maganese by the periodate method. A new and simplified—. G. F. SMITH AND V. R. SULLIVAN (Ar) ... 1461
Colors. Explains peculiarity of sunlight—(S) ... 575
Colors. New scientific council to standardize—(CN) ... 189
Columbium—*See*, The discovery of the elements. VII. M. E. WEEKS (Ar) 863
Combustion in the marshes of southern Louisiana. Spontaneous—. P. VIOSCA, JR. (Ab) ... 1303
Commemorative service for the British Association centenary (CN) ... 178
Common things. The story of—. L. EHRENFELD (B) ... 1497
Comparative cost of soaps as water softeners: a freshman experiment in chemistry. O. E. LOWMAN (Ar) ... 1809
Comparative study of science education in Sweden and the United States. A—. H. F. KILANDER (Ab) ... 2143
Comparator in the titration of aqueous extracts. Use of the hydrogen-ion—. H. J. ALMQUIST (Ar) ... 926
Comparison of chemical reactivity. H. ADKINS (Ar) ... 1865
Comparison of eight types of small fractionating columns from the viewpoint of usefulness in the student laboratory of organic chemistry. J. K. SIMONS AND E. C. WAGNER (Ar) ... 122
Compton. Arthur H.—(P) ... 954
Composite list of nontheatrical film sources (B) ... 2150
Conant. James Bryant—(P) ... 579
Conant awarded Chandler and Nichols medals (CN) ... 579
Concentrated nitric acid by direct synthesis avoids absorption. G. FAUSER (Ab) 2000
Concerning the JOURNAL (E) ... 1315
Conduction. Faraday and the theory of electrolytic—. H. HARTLEY (Ab) ... 164
Conduction. Michael Faraday and the theory of electrolytic—. H. HARTLEY (Ab) ... 370
Conductivity of electrolytes. A device for measuring the comparative—. B. H. PETERSON (Ar) ... 923
Conservation of ignorance. The—(S) ... 2083
Conservation of structural timber. The—. M. E. SMITH (Ab) ... 759
Constitution. Coal, color and—. H. E. ARMSTRONG (Ab) ... 2144
Construction of a diagnostic test in the mechanics and related fundamentals of high-school chemistry. J. E. MALIN (B) ... 1136
Consulting chemist and your business. The—(B) ... 402
Contract plan. The use of visual aids in teaching general science by a—. D. F. OSBURN (Ab) ... 367
Contribution of high-school chemistry toward success in the college chemistry course. L. E. STEINER (Ar) ... 530
Contribution to the history of the linking of substance with property. E. FÄRBER (Ab) ... 761
Convenient mercury measuring device. A—. L. V. CLIFCORN AND W. S. THOMPSON (Ab) ... 1660
Convenient method for the crystallization of sugars and other organic substances. A—. H. TAUBER AND I. S. KLEINER (Ar) ... 1970
Convenient method of applying liquid paraffin. A—. N. SCHAPIRO (Ab) .. 1660
Convenient method of cleaning pipets. A—. J. R. LEWIS (Ab) ... 1660
Conversion of solid to liquid or gaseous carbon dioxide (Ab) ... 158
Cooke. Josiah P.—(F). *See*, opp. p. 793; (P) *see also* ... 724
Cooke. Josiah P.—(Ab) ... 947
Coolidge. William David—(P) ... 955
Coolidge. The Washington award to W. D.—(CN) ... 955
Cooling apparatus. J. HALLER (Ab) ... 159
Cooling by evaporation. A demonstration of—. S. S. HAUBEN (Ar) ... 1115
Cooper. Thomas—(P) ... 693
Coöperation in education of chemists. Industrial—. B. P. CALDWELL (Ar) 1435
Coöperative plan at Northeastern University. Chemical engineering on the—. C. P. BAKER AND W. C. WHITE (Ar) ... 894

Coördinated engineering education. H. S. EVANS (Ab) 2143
Coördinates of certain point-groups. A graphical projection method of determining the—. D. MCLACHLAN AND W. P. DAVEY (Ar) 1953
Coördination of school and college work. A proposal for better—. W. M. AIKIN (Ab) 1838
Copper can now be made hard. W. E. GAMMON (Ab) 163
Copper ores cleared of sulfur by water (CN) 588
Copper, An integrated project on—utilizing visual aids in various forms. L. A. ASTELL (Ab) 762
Copper—*See*, The discovery of the elements. I. M. E. WEEKS (Ar) 6
Cornell College remodeled. Department of Chemistry at—. J. B. CULBERTSON (CN) 578
Cornell expanded. Non-resident Baker lectureship in chemistry at—(CN) ... 782
Cornell University. Summer courses in chemical microscopy at—(CN) 961
Cornell on Baker lectureship. Professor Stock is visiting—(CN) 586
Corner-stone records. Preservation of—. U. S. BUR. STANDARDS NOTE (Ab) ... 1129
Corrode. Electric currents in long pipe lines do not—(S) 537
Corrosion looms large in sulfuric acid plants. J. J. HEALY, JR. (Ab) 2137
Corrosion. Petroleum pays increasing toll to—. S. GILL (Ab) 2136
Corrosion and paint. The relation between—. W. H. J. VERNON AND L. A. JORDAN (Ab) 1303
Corrosion loss. Pulp and paper advance fight against—. J. D. MILLER (Ab). 2136
Corrosion problems. Different alloys needed to meet different—(S) 190
Corrosion problems. Thin films in relation to—. U. R. EVANS (Ab) 164
Corrosion—*See*, Dollars and cents—"The operating cost of corrosion." C. L. MANTELL (Ab) 2136
Corrosive action of hydrogen fluoride and its antidotes. The—. K. FREDENHAGEN AND M. WELLMANN (Ab) 2000
Cosmic rays again shown like radium gamma rays (S) 784
Cosmic rays break hearts of atoms (CN) .. 391
Cosmic rays from depths of space leave visible tracks (S) 451
Cosmic rays. Experiments with—. W. BOTHE (Ab) 1491
Cosmic rays. New artificial radiation resembles—(S) 121
Cosmic rays, World-wide study of—begun (CN) 954
Cost of education. The application of the motion picture to the problem of the rising—. B. A. AUGHINBAUGH (Ab) 161
Cost of education. Tuition and—. G. A. BRAKELEY (Ab) 368
Cost of scientific journals. The—(Ab) ... 2144
Cotton stalks, a new source of rayon. P. A. CARMICHAEL (Ab) 369
Cotton cellulose fiber. Microscopy of the—. R. N. TITUS, C. J. STAUD, AND HARRY LEB. GRAY (Ar) 114
Correction (C) 1296
Cotton hairs. Microscopy of—. H. ELLIS (Ab) 567
Cottrell precipitation—*See*, Experiments in microscopy. E. W. BLANK (Ab) .. 2133
Couper centenary meeting (CN) 395
Couper century meeting. ANON. (Ab) ... 571
Couper. Alexander Scott—. J. C. IRVINE (Ab) 571
Course in general chemistry including an introduction to qualitative analysis. A—. W. C. BRAY AND W. M. LATIMER (B) 1496
Course in quantitative analysis. A—. J. S. GUY AND A. SKEEN (B) 1309
Course of qualitative chemical analysis of inorganic substances. A—. O. F. TOWER (B) 967
Course. Contribution of high-school chemistry toward success in the college chemistry—. L. E. STEINER (Ar) 530
Course in chemistry. Research in the undergraduate curriculum of the—. G. B. L. SMITH (Ar) 285
Course in general chemistry—*See*, Carbon compounds in general chemistry. A. J. CLARK (Ar) 99
Course in methods of teaching science. A college—. V. GEGENHEIMER (Ar) 1439
Course in science. The aims of a college—. A. A. BLESS (Ar) 889
Courses. A plan for introducing biographical material into science—. J. H. SAMMIS (Ar) 900
Courses at Pittsburgh. Summer—(CN) 961
Courses in chemical microscopy at Cornell University. Summer—(CN) 961
Courses, The chemistry teacher and service—in the land-grant college. R. E. KIRK (Ar) 538
Coyle. George L., S.J.—(P), (CN) 769
Crell. D. Lorenz von—(P) 1234
Crime clues bared by chemist's magic. Hidden—. E. W. TEALE (Ab) 368
Crime detection laboratory. The scientific—. L. J. KAEMPFER (Ab) 757
Crime prevention through education (Ab) 2143
Criminal investigation. Forensic chemistry and scientific—. A. LUCAS (B) .. 401
Cronstedt. Axel Friedrich—(P) 1238
Crookes. Sir William—(P), (Ab) ... 1427, 2140
Crowding in special apparatus rooms. A plan for prevention of—. H. B. WYLIE (Ar) 2090
Crystal. Stone age men made tools of—(S) 348
Crystallization. A small contribution to the history of—. E. O. VON LIPPMANN (Ab) 166
Crystallization of sugars and other organic substances. A convenient method for the—. H. TAUBER AND I. S. KLEINER (Ar) 1970
Crystals. Preparation of rhombic sulfur—. C. H. STONE (C) 941
Crystals. Some experiments with—. C. H. STONE (Ar) 1107
Crystals of chrome alum. The preparation and preservation of large—. L. J. FLIEDNER (Ar) 1453
Crystals, Magnetic properties of metal—changed by "dilution" (S) 46
Cuprammonium rayon. Distinction between viscose and—. J. BRENNAN (Ab) 570
Cupric bromide. The equilibrium relations in a water solution of—. T. H. WHITEHEAD (Ar) 1457
Curiosity. A chemical—. H. W. MATZKE (Ar) 1259
Current science (B) 2150
Current, magnetism from the electric—"A classic of science" (Ab) 1132
Curriculum of the course in chemistry. Research in the undergraduate—. G. B. L. SMITH (Ar) 285
Curriculum of the premedical student. Chemistry in the college—. R. I. GRADY (Ar) 111
Curves of ideal solutions of two volatile, consolute liquids. Vapor pressure-vapor composition—. H. S. VAN KLOOSTER (Ar) 1455
Cyanides in industry. Alkali—ANON. (Ab) 568

Da Vinci. Leonardo—(P) 222
Dana. James Freeman—(P) 691
Dare progressive education be progressive? G. S. COUNTS (Ab) 1308

Davy. Sir Humphry—(P)....1037, 1047, 1917
De Beaumont. Louis Élie—(P)..... 1404
De Boisbaudran. Lecoq—(P)..... 1605
De Fourcroy. Antoine François—(P). 470, 637
De Marignac. Jean Charles Galissard—(P)..... 1758
De Morveau. Louis Bernard Guyton—(P) 637, 1232
De Ulloa. Don Antonio—(P)..... 1017
Debray. J. Henri—(P)..... 1032
Debus. Heinrich—(P)..... 1417
Decade in chemical manufacture. Our greatest—. O. WILSON (Ab)..... 1663
Decay prevented for first time in history. Tooth—(CN)..... 587
Decennial meeting, Division of Chemical Education, American Chemical Society. J. N. SWAN (Ar)..... 670
Decimalization of United States weights and measures. Jefferson's efforts toward the—. C. D. HELLMAN (Ab) 761
Decomposition of carbon monoxide in the presence of iron and iron oxides. P. RISCHBIETH (Ab)..... 157
Deepest oil well opens new fields two miles down. S. GLEASON (Ab)..... 574
Degree. Requirements for the master's—. COM. REP. (Ab)..... 1493
Delafontaine. Marc—(P)..... 1757
Demand for silver starts new rush in west. H. H. DUNN (Ab)..... 1303
Demarçay. Eugène Anatole—(P)..... 1767
Demonstration experiment on the diffusion of metals. A—. E. W. BLANK (Ar) 317
Demonstration of artificial resins. The—. S. B. BAMBERGER (Ab)..... 565
Demonstration of cooling by evaporation. A—. S. S. HAUBEN (Ar)..... 1115
Demonstration of liquefied gases. The—. H. RHEINBOLDT (Ab)..... 155
Demonstration of the Solvay-soda process in the classroom. The—. H. RHEINBOLDT AND L. BEUMELBURG (Ab)..... 1832
Demonstration, A—; Fixation of atmospheric nitrogen. H. L. OLSSON (Ar) 1829
Demonstrations with a purpose. Lecture—. EDIT. (Ab)..... 1133
Dental profession. Chemistry and the—. C. S. GIBSON (Ab)..... 2002
Denver meeting of the American Chemical Society. The—. C. M. KNUDSON (Ab) 2144
Denver meeting of the A. C. S.—*See*, Division of Chemical Education, A. C. S., in this index.
Department of Chemistry at Cornell College remodeled. J. B. CULBERTSON (CN)..... 578
Department frontiers. Disregarding—. L. P. MILLER (Ar)..... 1069
Designing materials with specific rheological properties. On—. E. C. BINGHAM (Ab)..... 569
Detection of strontium in the presence of calcium. The—. A. W. AVENS AND M. J. MURRAY (Ar)..... 522
Detergent. The value of silicate of soda as a—. J. D. CARTER (Ab)..... 759
Determination of manganese. The—. R. G. HARRY (Ab)..... 1303
Determination of the equivalent weight of magnesium. The—. V. E. REEF (Ar)..... 524
Determination of water in hydrated salts by means of the nickel-crucible radiator. The—. W. M. THORNTON, JR., R. ROSEMAN, AND M. NEISHLOSS (Ar)..... 1645
Determining friction losses in piping systems. M. J. REED AND L. H. MORRISON (Ab)..... 2001
Development of scientific research in the South. The—. G. J. FERTIG (Ab).. 1664
Development. Vast raw material resources await chemical—. W. M. WEIGEL (Ab)..... 1836
Developments in chemical engineering. H. W. CREMER (Ab)..... 758
Developments in the acetic acid industry. M. SCHOFIELD (Ab)..... 1303
Developments in the chemical industry during 1931. G. P. POLLITT (Ab).. 757
Device for measuring the comparative conductivity of electrolytes. A—. B. H. PETERSON (Ar)..... 923
Device for the simultaneous observation of melting-point and temperature. E. W. BLANK (Ar)..... 1975
Device for trapping offensive gases. A—. G. C. WARE (Ar)..... 1475
Device. Automatic suction and dropping—. E. LÖWENSTEIN (Ab)..... 2131
Device for holding ultra-filtration membranes. A simple—. C. BREEDIS (Ab)..... 755
Deville. Charles and Henri Sainte-Claire—(P)..... 1405
Devising plant and process for simplified rayon manufacture. T. R. OLIVE (Ab) 1663
Dewey. Chester—(P)..... 699
Dialyzer. A new extraction—. H. RAAB (Ab)..... 160
Diamonds found in American gravels (S) 858
Diamonds made to order. ANON. (Ab)... 1661
Didymia—*See*, The discovery of the elements. XVI. M. E. WEEKS (Ar).. 1753
Dietary facts and fads. W. C. ROSE (Ab) 162
Difference quotients and their application to certain types of empirical equations in physical chemistry. T. DE VRIES (Ar)..... 2094
Different alloys needed to meet different corrosion problems (S)..... 190
Diffusion of metals. A demonstration experiment on the—. E. W. BLANK (Ar)..... 317
Diffusion of science. The—. Symposium (Ab)..... 2004
Diphtheria prevention perfected with toxoid (S)..... 110
Directions for abstractors of the JOURNAL OF CHEMICAL EDUCATION..... 561
Discoveries be patented, Should scientific —? E. L. SEVRINGHAUS (Ab)..... 2144
Directory, Educational—, 1932. Part II. Institutions of higher education (B).. 1500
Discovery of the electric cell (1800). The—. G. SARTON (Ab)..... 761
Discovery of palladium. On the—. A. M. WHITE AND H. B. FRIEDMAN (Ar) 236
Discovery of the elements. The—. M. E. WEEKS (Ar). Foreword..... 3
I. Elements known to the ancient world..... 4
II. Elements known to the alchemists 11
III. Some eighteenth-century metals 22
Correction (C)..... 2127
IV. Three important gases..... 215
Correction (C).....1122, 1296
V. Chromium, molybdenum, tungsten, and uranium..... 459
VI. Tellurium and selenium..... 474
VII. Columbium, tantalum, and vanadium..... 863
VIII. The platinum metals..... 1017
IX. Three alkali metals: potassium, sodium, and lithium..... 1035
X. The alkaline earth metals and magnesium and cadmium..... 1046
XI. Some elements isolated with the aid of potassium and sodium: zirconium, titanium, cerium, and thorium..... 1231
Correction (C)..... 1657
XII. Other elements isolated with the aid of potassium and sodium: beryllium, boron, silicon, and aluminum... 1386
Correction (C)..... 1659
XIII. Some spectroscopic studies.... 1413
Correction (Ar)..... 2078
XIV. The periodic system of the elements..... 1593

XV. Some elements predicted by Mendeléeff 1605
XVI. The rare earth elements 1751
XVII. The halogen family 1915
XVIII. The inert gases 2065
Aluminum statue of Charles M. Hall (C) 1659
Paracelsus and the discovery of hydrogen (C) 1122, 1296
Thallium (C) 2078
Vanadium (C) 1657
Discovery of the elements. The—. Vanadium. J. STRAUSS (C) 1657
Disease. Sees beginning of new epoch in conquest of—(S) 141
Disposing of ammonia liquor as a waste product. D. V. MOSES AND B. H. MACKEY (Ab) 2001
Disregarding department frontiers. L. P. MILLER (Ar) 1069
Distinction between viscose and cuprammonium rayon. J. BRENNAN (Ab) ... 570
Division of Chemical Education, A. C. S., Decennial meeting—. J. N. SWAN (Ar) 670
Division of Chemical Education, A. C. S.: Denver meeting
Announcement, Preliminary 1295
Program *1295*, *1592*
Secretary's report 2100
Division of Chemical Education, A. C. S.: *New Orleans meeting*
Announcements, Preliminary 379, 404
Program 576, 765
Secretary's report 1477
Division of History of Chemistry, American Chemical Society. Historical sketch of the—. L. C. NEWELL (Ar) 667
Döbereiner. Johann Wolfgang—(P) 1593
Doctorates in chemistry and related fields conferred by American Universities, 1930–31. Correction. C. J. WEST AND C. HULL (C) 154
Doctorates in chemistry and related fields conferred by American universities, 1931–32. C. J. WEST AND C. HULL (Ar) 1976
Does research bring disrespect? W. W. KEMMERER (Ab) 950
Donnan equilibria and their application to chemical, physiological, and technical processes. The—. T. R. BOLAM (B) 1669
Dollars and cents—"The operating cost of corrosion." C. L. MANTELL (Ab) ... 2136
Double hydrogen atom, new building stone of matter, is found (CN) 390
Double weight hydrogen atoms proved by new test (CN) 776
Draper. John W.—(P) 710
Dreams and realities. L. H. BAEKELAND (Ar) 1000
Drier for analytical balances. A new air—. E. LÖWENSTEIN (Ab) 1127
Drills to decrease picture-memorizing in the study of graphical chemistry. A report on—. H. P. HOWELLS (Ar) .. 1249
Dropping device. Automatic suction and —. E. LÖWENSTEIN (Ab) 2131
Drugs were dregs. When—(Ab) 167
Dryer performance. Factors That influence—. A. WEISSELBERG (Ab) 2001
Dumas. Jean Baptiste André—(P) 1428
Dye. The first synthetic—. E. L. WEART (Ab) 1664
Dye industry searches for cheaper plant materials. H. MILLER (Ab) 2136
Dyeing. Modern processes in wool—. G. WALLACE (Ab) 570
Dyestuffs. Interesting sources of natural—. C. D. MELL (Ab) 569
Dynamite's giant power makes impossible tasks easy. C. R. SLAWTER (Ab) ... 569
Dysprosia—*See*, The discovery of the elements. XVI. M. E. WEEKS (Ar) .. 1767

E. H. S. Bailey prize in analytical chemistry at The University of Kansas. The—(CN) 956
Early experiment of James Woodhouse upon the synthetic production of ammonia. An—. C. A. BROWNE (Ar). 1744
Early history of the first chemical reagent. The—. M. NIERENSTEIN (Ab) 761
Early steps in photography. "A classic of science" (Ab) 1305
Eastern New York section, A. C. S., plans symposium on chemical education (CN) 960
Eaton. Amos—(P) 699
Economy in education (E) 971
Eddington tells scientists. Universe is exploding—(S) 279
Edgar Fahs Smith Memorial Collection, University of Pennsylvania. The—. E. ARMSTRONG (Ar) 652
Edgar Fahs Smith Memorial Number (E) 405
Edison, the greatest American of the century. E. LUDWIG (Ab) 571
Editorial objectives (E) 1501
Editorials (E):
Anatomy of Logic (Pathological) 1843
Can the summer session extend its service *beyond the teacher?* 201
Cashing a Potentiality 1845
Concerning the Journal 1315
Economy in education 971
Editorial objectives 1501
Fall fever 1673
First take your hare 2012
Laboratory notes and why 2011
Old tune: new words 1
On being different 2011
Principles 1844
Research for teachers 1140
Should the teacher be a recruiter for *chemistry?* 403
The final ordeal 973
The historical approach 1139
The shade of Socrates 793
The unemployed chemist 1316
Educating chemical engineers in the southwest. O. M. SMITH (Ab) 1838
Education (B) 2150
Education and unemployment. R. A. MILLIKAN (Ab) 574
Education for commercial research. F. J. CURTIS (Ar) 55
Education in Belgium (B) 1672
Education. Economy in—(E) 971
Education. Ethics in higher—(S) 2025
Education. Federal relations to—(B). Part I. Committee findings and recommendations 402
Part II. Basic facts 402
Education. First things in—. W. H. KILPATRICK (Ab) 1307
Education. Oregon state system of higher—(B) 2010
Education. Pharmaceutical—. W. F. RUDD (Ar) 272
Education. Recent theses in—(B) 970
Education. The science of—. M. J. DEMIASHKEVICH (Ab) 1492
Education. Tuition and cost of—. G. A. BRAKELEY (Ab) 368
Education during 1931. American—(CN) 594
Education of chemists. Industrial cooperation in—. B. P. CALDWELL (Ar) 1435
Education, Bibliography of research studies in—: 1929–30 (B) 200
Education, Biennial survey of—in the United States, 1928–30 (B). Vol. I. Chap. III. Secondary education 606
Vol. 1. Chap. IV. Industrial education 792
Vol. 2. Chap. III. Statistics of city school systems, 1929–30 2010
Educational directory, 1932. Part II. Institutions of higher education (B).. 1500
Educational implications. Certain problems of the machine age and their—. H. S. MOORE (Ab) 1306
Educational publications. Record of current—(B)

July 1–Sept. 30, 1931 792
Oct.–Dec., 1931 1138
Jan.–Mar., 1932 2010
Educational section of the midwest regional meeting of the American Chemical Society. Program for the—(CN). 960
Educational tests and measurements announced. Dr. Segel's appointment as specialist in—(CN) 181
Effect of class-size upon the efficiency of instruction. J. H. H. SMITH (Ab) ... 2142
Effect of sunlight upon man. The—. J. H. POTTS (Ab) *373*
Effects of different instructors for recitation and laboratory in freshman chemistry. F. E. BROWN AND R. R. COONS (Ar) 1949
Egyptian mint—*See*, Mansur Al-Kamily.
E. J. HOLMYARD (Ab) 760
Eighth census of graduate research students in chemistry, 1931. The—. C. HULL AND C. J. WEST (Ar) 1472
Eightieth birthday of Richard Anschütz. The—. F. REINDEL (Ab) 1131
Einstein relativity theory still stands. Basis of—(S) *373*
Ekeberg. Anders Gustav—(P) 868
Electric cell (1800). The discovery of the—. G. SARTON (Ab) 761
Electric current, Magnetism from the—"A classic of science" (Ab) 1132
Electric currents in long pipe lines do not corrode (S) *537*
Electric furnace. A simple—. J. KISSEL AND N. KRAMER (Ar) 147
Electrical resistance measurements. Apparatus for—(B) 1138
Electricity in the laboratory. E. C. WEAVER (Ar) 142
Electrochemistry. Principles and practice. C. J. BROCKMAN (B) 603
Electrochemistry. Faraday's researches in—. A. MARSHALL (Ab) 164
Electrochemistry. The metals in—. L. KAHLENBERG (Ab) 568
Electrolytes. A device for measuring the comparative conductivity of—. B. H. PETERSON (Ar) 923
Electrolytes. The teaching of the theory of the dissociation of—. M. KILPATRICK, JR. (Ar). I. The application of the law of mass action to solutions of electrolytes 840
III. The colorimetric method 1226
Electrolytes. The teaching of the theory of the dissociation of—. II. The definition of pH. M. KILPATRICK, JR. AND M. L. KILPATRICK (Ar) 1010
Electrolytic conduction. Faraday and the theory of—. H. HARTLEY (Ab) .. 164
Electrolytic conduction. Michael Faraday and the theory of—. H. HARTLEY (Ab) 370
Electron can still be regarded as bullet (S) 325
Electron moment. The romance and utility of the—. J. F. HALLER (Ab) 162
Electron tubes. A new versatile production tool. W. R. KING (Ab) 1662
Electron rays, Measurement of—is improved (CN) 593
Electronic theory of chemistry. Some applications of the—. R. F. HUNTER (Ab) 570
Electronic theory, Some applications of the—to valency. R. F. HUNTER (Ab) 1130
Electron's speed and location knowable, but not where it is going (S) 260
Electrons, Modern physics needs no—, says Swann (CN) 589
Electrons, Speeding—make large molecules form (S) 606
Elektrolyte. H. FALKENHAGEN (B) 2009
Element rhenium. The—. I. AND W. NODDACK (Ab) 161
Element discoveries. Apparent blunder led to new—(CN) 777
Element 87. Third competitor to enter race for missing—(CN) 188
Element 87 confirmed by Georgia scientists. Tests for new—(CN) *592*
Element of a thousand uses. Silicon, the—. A. VIEHOEVER (Ab) 946
Element, Boyle's conception of—compared with that of Lavoisier. T. L. DAVIS (Ab) 760
Elementary chemistry. Quantitative experiments in—. II. A measure of catalysis. R. D. BILLINGER (Ar) 144
Elementary chemistry, Adapting—to girls' interests. A. LEVESCONTE (Ar) 1620
Elementary study of chemistry. An—. W. MCPHERSON AND W. E. HENDERSON (B) 2145
Elements of general chemistry. J. A. BABOR, W. L. ESTABROOKE, AND A. LEHRMAN (B) 192
Elements of general chemistry. Laboratory manual in—. J. A. BABOR, W. L. ESTABROOKE, AND A. LEHRMAN (B) 192
Elements heavier than uranium, No chemical—, scientist concludes (CN) 951
Elements. A "living" periodic chart of the—. H. H. FILLINGER (Ar) *1807*
Elements. Predicting undiscovered—. "A classic of science" (Ab) 371
Elements. The Discovery of the—. M. E. WEEKS. See, Discovery of the elements. The—, in this index.
Elements, Three common—in group IV. "A classic of science" (Ab) 2140
Elements were found. How the last two—. H. A. WEBB (Ab) 2141
Elements yielded by yttrium. Some—. "A classic of science" (Ab) 370
Eleventh Congress of Industrial Chemistry held in Paris (CN) 393
Elinvar—*See*, On time. ANON. (Ab) 758
Emulsions. The preparation of—. W. CLAYTON (Ab) 946, 1129
Encyclopædia. Chemical—. C. T. KINGZETT (B) 2008
Encyclopedia for the chemist, pharmacist, and physician. Merck's index, an—(B) 198
Endemann. Samuel Theodore Herman Carl—(P) 737
Endless fight for water. J. F. GELDERS (Ab) 372
Endurance of steel reduced by steam (S) .. 113
Energies of some organic compounds. The free—. G. S. PARKS AND H. M. HUFFMAN (B) 2149
Energy. Ostwald on chemical—. "A classic of science" (Ab) 1664
Energy and power—*See*, Living in a world of science. M. MEISTER (B) 397
Energy of canal rays. Lecture experiment for the demonstration of the—. E. BADEREN (Ab) 156
Engineering. The future of—. K. T. COMPTON (Ab) 763
Engineering education. Coördinated—. H. S. EVANS (Ab) 2143
Engineering, Ramsay Memorial Laboratory of Chemical—, University of London (CN) 394
English impression of American general science. An—. F. W. TURNER (Ab) 2003
English schools. Science in—(Ab) 2143
Enzyme chemistry. Recent advances in—. The mechanism of peptide hydrolysis. A. K. BALLS (Ab) 163
Equations. Balancing chemical—(C), 358, 360, 361, 560, 751, 752, 753, 944, 1124, 1125 1299
Equations in physical chemistry. Difference quotients and their application to certain types of empirical—. T. DE VRIES (Ar) 2094
Equilibria, The Donnan—and their application to chemical, physiological, and technical processes. T. R. BOLAM (B) 1669

Equilibrium experiment for an introductory laboratory course in physical chemistry. An—. E. J. SHAW AND M. E. HYDE (C) 364
Equilibrium experiment for an introductory laboratory course in physical chemistry. An—. Method of extrapolating to zero concentration. C. V. KING (C) 150
Equilibrium relations in a water solution of cupric bromide. The—. T. H. WHITEHEAD (Ar) 1457
Equilibrium. Usable analogies in teaching fundamentals of chemical—. W. E. CALDWELL (Ar) 2079
Equipment for the small laboratory. Glass-working—. C. B. DEWITT (Ar) 209
Equipment for the student organic laboratory. Small fractionating columns as standard—. E. C. WAGNER (Ar) ... 320
Equivalent weight of magnesium. The determination of the—. V. E. REEF (Ar) 524
Erbia—*See*, The discovery of the elements XVI. M. E. WEEKS (Ar). 1758, 1759, 1761
Erlenmeyer. Emil, S.—(P) 1909
Errors in our food economy. "A classic of science" (Ab) 1132
Errors of the doctors according to Friar Roger Bacon of the minor order. The—. M. C. WELBORN (Ab) 2138
Essays in organic chemistry. Model—. D. D. KARVÉ AND G. D. ADVANI (B) 1312
Ethics in higher education (S) 2025
Ethics. Natural—(S) 2089
Ethyl acetate, Saponification of—*See* An experiment on a bimolecular reaction for the physical chemistry laboratory. C. B. HURD (Ar) 513
Ethyl alcohol. The catalytic decomposition of—. H. E. MORRIS (Ar) 1730
European scientists study neutron. V. COFMAN (Ab) 1490
Europia—*See*, The discovery of the elements. XVI. M. E. WEEKS (Ar).. 1767
Evaluation of sulfur suspensions used in spraying. The—. R. M. WOODMAN (Ab) 2001
Evaporation. A demonstration of cooling by—. S. S. HAUBEN (Ar) 1115
Evolution of universe. British Association holds symposium on—(CN) 179
Examination of water, chemical and bacteriological. W. P. MASON (B) 399
Examination, U. S. civil-service—for assistant assayer (S) 1972
Examinations in the university of life. O. D. YOUNG (Ab) 573
Exercises and problems in general chemistry. Laboratory—. B. S. HOPKINS AND H. A. NEVILLE (B) 397
Exhibit available on manufacture of portland cement. M. A. BERNS (C).... 1486
Exhibit. A chemistry—. H. W. BAKER AND L. I. PHARES (Ar) 501
Exhibit material—*See*, Sources of project material. H. W. HANSEN (Ar) 1078
Experiment in laboratory technic. An—. H. J. LONG (Ar) 913
Experiment in visual education in elementary college chemistry. An—. B. S. HOPKINS AND H. G. DAWSON (Ab) 1837, 2142
Experiment on a bimolecular reaction for the physical chemistry laboratory. An—. C. B. HURD (Ar) 513
Experiment to show the catalytic action of manganese dioxide on the decomposition of potassium chlorate and the measurement of the products of the reaction. An—. J. E. MACKENZIE (Ar) 1111
Experiment with true-false tests. An—. J. R. BIETZ (Ab) 762
Experiment. Hydrogen from iron and water at room temperature and a suggested lecture—. L. T. ALEXANDER AND H. G. BYERS (Ar) 916
Experiment based on the Freundlich surface activity equation. A laboratory—. G. W. BENNETT (Ar) 517
Experiment for an introductory laboratory course in physical chemistry. An equilibrium—. E. J. SHAW AND M. E. HYDE (C) 364
Experiment for an introductory laboratory course in physical chemistry. An equilibrium—. Method of extrapolating to zero concentration. C. V. KING (C) 150
Experiment for the demonstration of the energy of canal rays. Lecture—. E. BADEREN (Ab) 156
Experiment in chemistry. Comparative cost of soaps as water softeners: A freshman—. O. E. LOWMAN (Ar)... 1809
Experiment in second-year college chemistry. Another—. W. R. CARMODY (Ar) 1244
Experiment of James Woodhouse upon the synthetic production of ammonia. An early—. C. A. BROWNE (Ar).... 1744
Experiment on the diffusion of metals. A demonstration—. E. W. BLANK (Ar) 317
Experiment on the preparation of hydrocyanic acid from methyl amine. Lecture—. H. EMDE AND T. HORNEMANN (Ab) 158
Experiment—*See*, A simple set-up for making water gas, generator gas, and carbon monoxide. W. FLÖRKE (Ab)... 1833
Experimental use of units in physics. Report on the—. A. W. HURD (Ab)... 1306
Experiments for the demonstration of the radioactivity of polonium. F. HOFFMANN (Ab) 155
Experiments in allotropy. I. Arsenic and iron allotropes. E. W. BLANK (Ab) 1999
Experiments in microscopy. Demonstrating Brownian movement and Cottrell precipitation. E. W. BLANK (Ab)... 2133
Experiments with cosmic rays. W. BOTHE (Ab) 1491
Experiments with gas for the home laboratory. R. B. WAILES (Ab) 2133
Experiments with oxygen. R. B. WAILES (Ab) 1660
Experiments with sulfur for your home laboratory. R. B. WAILES (Ab)..... 1999
Experiments. Accuracy of certain physico-chemical—. R. J. DEGRAY (Ar) 903
Experiments. Molecules observe speed limit in new—(CN) 392
Experiments in elementary chemistry. Quantitative—. II. A measure of catalysis. R. D. BILLINGER (Ar).... 144
Experiments reported by James Woodhouse in 1808 relative to the production of ammonia. Repetition of—. K. S. LOVE AND P. H. EMMETT (Ar).. 1748
Experiments with crystals. Some—. C. H. STONE (Ar) 1107
Experiments—*See*, Industrial stunts for the home chemists. R. B. WAILES (Ar) 1660
Explains peculiarity of sunlight colors (S) 575
Exploring the extremes of temperature. D. L. WATSON (Ab) 372
Explosive made from natural gas. New—(S) 284
Explosives: a new job for carbon dioxide. Blasting without—. F. H. KNEBLAND (Ab) 2133
Extinguishing fires with chemicals. I. SCHEFLAN (Ar) 1503
Extraction dialyzer. A new—. H. RAAB (Ab) 160
Extractor for "frozen" bottle stoppers. An—. S. L. REDMAN (C) 940

Fabric. From flax to—. W. H. GIBSON (Ab) 570
Fabrics. Microanalysis of—. E. R. SCHWARZ (Ab) 567
Fabrics. Microanalysis of—. ANON. (Ab) 570
Factors, Analytical—and their logarithms. E. R. CALEY (B) 967
Factors that influence dryer performance. A. WEISSELBERG (Ab) 2001
Faculty of sciences. The—(CN) 958
Faculty inbreeding in land-grant colleges and universities (B) 2010
Faculty. Indices of the qualities of a—. H. L. HUMKE (Ab) 371
Fairmont State Teachers College. New science hall at—. H. F. ROGERS (CN) 952
Fall fever (E) 1673
Fall meeting of the A. C. S., Denver, Colo. 1295
Faraday (Ab) 164, 2144
Faraday. E. W. ASHCROFT (B) 968
Faraday. EDIT. (Ab) 370
Faraday. L. H. FRIEDBURG (C) 151
Faraday and marine boilers. ANON. (Ab) 571
Faraday and the theory of electrolytic conduction. H. HARTLEY (Ab) 164
Faraday celebrations, 1931. The—. T. L. DAVIS (Ar) 1202
Faraday centenary. The—. E. THOMSON (Ab) 165
Faraday centenary exhibition (Ab) 165
Faraday. Metallurgical researches of—. F. C. T. (Ab) 761
Faraday. Michael—(P) 1202, 1215
Faraday, Michael—. W. BRAGG (Ab) ... 571
Faraday, Michael—and electrochemistry. H. HARTLEY (Ab) 2140
Faraday, Michael—and the theory of electrolytic conduction. H. HARTLEY (Ab) 370
Faraday, Michael—, the man. H. W. BLOOD-RYAN (Ab) 164
Faraday's contributions to chemistry. L. C. NEWELL (Ab) 164
Faraday's researches in electrochemistry. A. MARSHALL (Ab) 164
Faraday's views on passivity in the light of recent research. E. S. HEDGES (Ab) 165
Fat hydrogenation. E. F. ARMSTRONG (Ab) 1128
Fatigue. Nickel tubing resists—. R. WORTHINGTON (Ab) 1491
Federal chemists show how acids damage paper (S) 2031
Federal relations to education. (B) Part I. Committee findings and recommendations 402
Part II. Basic facts 402
Fellowships in analytical chemistry, 1931–32. The J. T. Baker Chemical Company—(CN) 177
Fellowships of the American Association of University Women. Graduate—(CN) 383
Fellowships, Scholarships and—. Grants available in United States colleges and universities (B) 970
Ferric chloride. Tincture of—. A. OSOL (Ab) 568
Ferricyanides. Oxidation reactions with—. L. ROSENTHALER (Ab) 1661
Fertility, Lightning adds—to earth (CN) 593
50,000 Scholarships in United States (CN) 954
Fighting fires which involve chemicals. L. K. ARNOLD AND L. J. MURPHY (B) .. 200
Film sources. Composite list of nontheatrical—(B) 2150
Films. The protection of metals by metallic—. E. S. HEDGES (Ab) 163
Films in relation to corrosion problems. Thin—. U. R. EVANS (Ab) 164
Final ordeal. The—(E) 973
Final program of the Division of Chemical Education, the Denver meeting of the A. C. S., August 22–26, 1932 (Ar) 1592
Final program, Division of Chemical Education, New Orleans Meeting of the A. C. S. (CN) 765
Find way to measure amount of vitamin B needed (S) 102
Finds sex differences in oxygen need of tissues (S) 575
Fire damages physical and chemical laboratories of St. Andrew's University (CN) 395
Fire. Some elementary laboratory precautions against—(S) 1522
Fire-fighting, Chemical hazards in—. L. K. ARNOLD (Ar) 1523
Correspondence 2127
Fire-fighting. Quartz takes up—. G. LOCKHART (Ab) 2135
Fires which involve chemicals. Fighting—. L. K. ARNOLD AND L. J. MURPHY (B) 200
Fires with chemicals. Extinguishing—. L. SCHEFLAN (Ar) 1503
First morphine. The—. "A classic of science" (Ab) 2140
First synthetic dye. The—. E. L. WEART (Ab) 1664
First take your hare (E) 2012
First things in education. W. H. KILPATRICK (Ab) 1307
Fittig. Rudolf—(P) 2068
Fixed nitrogen. H. A. CURTIS, *editor* (B). 2006
Flakes of ice (S) 516
Flavor. Vitamins and—. D. M. TORRANCE (C) 151
Flax to fabric. From—. W. H. GIBSON (Ab) 570
Flotation of the non-sulfides. Soap—. W. H. COGHILL AND J. B. CLEMMER (Ab) 1130
Fluorine proved cause of mottled teeth (S) 858
Fluorine. The industrial compounds of—. G. M. DYSON (Ab) 568
Fluorine—*See*, The discovery of the elements. XVII. M. E. WEEKS (Ar) .. 1928
Food more important for good teeth than brushing (S) 600
Food. The chemist and—. L. H. LAMPITT (Ab) 1129
Food and nutrition. Chemistry of—. H. C. SHERMAN (B) 1671
Food economy. Errors in our—. "A classic of science" (Ab) 1132
Food problems. Quick-freezing solves—. D. H. KILLEFFER (Ab) 369
Forensic chemistry and scientific criminal investigation. A. LUCAS (B) 401
Forgotten article on agricultural chemistry by Alexander von Humboldt. A—. E. O. VON LIPPMANN (Ab) 761
Formulas. Further remarks on the determination of—. F. J. ALLEN (C) 557
Fortunes and misfortunes in iodine. P. F. HOLSTEIN (Ab) 2000
Fortunes built on gold from garbage. B. SPARKS (Ab) 574
Forty years of stereochemistry. W. J. POPE (Ab) 2141
Fourcroy. Antoine François de—(P) .. 470, 637
Fourteen points govern building of atom cores (CN) 593
XIVth Annual congress of secondary education, London, July, 1932 (CN) 956
Fractionating columns as standard equipment for the student organic laboratory. Small—. E. C. WAGNER (Ar) 320
Fractionating columns from the viewpoint of usefulness in the student laboratory of organic chemistry. Comparison of eight types of small—. J. K. SIMONS AND E. C. WAGNER (Ar) 122
Franklin. E. C.—(with Charles L. Parsons and Edgar Fahs Smith) (P) 623
Franklin, Edward Curtis—, the man. J. STIEGLITZ (Ab) 1491
Franklin. The ingenious Dr.—. N. G. GOODMAN (B) 601

Franklin Institute of Pennsylvania. Notes on the early teaching of chemistry in the University of Pennsylvania, the Central High School of Philadelphia, and the—. J. S. HEPBURN (Ar) 1576
Fraunhofer. Josef—(P) 1414
Free energies of some organic compounds. The—. G. S. PARKS AND H. M. HUFFMAN (B) 2149
Free radicals. A survey of the chemistry of—. M. GOMBERG (Ar) 439
Fremy. Edmond—(P) 1931
Freundlich surface activity equation. A laboratory experiment based on the—. G. W. BENNETT (Ar) 517
Friction losses in piping systems. Determining—. M. J. REED AND L. H. MORRISON (Ab) 2001
From alchemy to chemistry in the Museum of Science and Industry, Chicago (CN) 168
From flax to fabric. W. H. GIBSON (Ab) 570
From gas to liquid. "A classic of science" (Ab) 1837
Frontiers. Disregarding department—. L. P. MILLER (Ar) 1069
Frontiers of science. The—. M. TRUMPER (Ar) 1373
Frostbite protection. Tells new theory of—(CN) 184
Frozen stoppers. Two simple methods for extracting—. C. A. SLOAT AND A. E. DIEHL (Ar) 1267
"Frozen" bottle stoppers. An extractor for—. S. L. REDMAN (C) 940
Fruit being developed. New type of frozen—(S) 858
Fruit by detecting minute scratches. New process saves—(S) 83
Fuchs. New blood test for cancer developed by—(CN) 389
Fume hoods for high-school laboratories. Necessity of—. R. E. DUNBAR AND L. O. SHULT (Ar) 919
Fundamentals of physical chemistry. E. C. H. DAVIES (B) 2148
Fundamentals of the relativity theory. The—. M. TALMEY (Ab) 760
Fungous friends and foes. M. S. DUNN (Ab) 947
Funnel. A hot-water—. V. A. TOSCANI (Ab) 1660
Furnace. A simple electric—. J. KISSEL AND N. KRAMER (Ar) 147
Further remarks on the determination of formulas. F. J. ALLEN (C) 557
Future development of coal. The—. W. R. ORMANDY (Ab) 370
Future man of science. The—. G. W. STEWART (Ab) 166
Future of engineering. The—. K. T. COMPTON (Ab) 763
Future of rayon. The—. ANON. (Ab) ... 370

Gadolin. Johann—(P) 1751
Gadolinia—*See*, The discovery of the elements. XVI. M. E. WEEKS (Ar) .. 1763
Gahn. Johann Gottlieb—(P) 27
Gallium—*See*, The discovery of the elements. XV. M. E. WEEKS (Ar) ... 1605
Game. Kem: an instructive chemistry card—. D. BROWN (Ab) 2142
Gamma rays. The origin of the—. E. RUTHERFORD (Ab) 2134
Garbage. Fortunes built on gold from—. B. SPARKS (Ab) 574
Gas. Adaptation of the Bunsen burner to natural—. G. R. ROBERTSON (Ar) .. 1963
Gas. New explosive made from natural—(S) 284
Gas absorption. An automatic alarm for use in—. T. H. VAUGHN (Ar) 528
Gas analytical investigations. A new leveling vessel for producing constant pressure in—. W. HERBERT AND W. WAHLIG (Ab) 160
Gas and alcohol. Mixing—. (Ab) 2134
Gas for the home laboratory. Experiments with—. R. B. WAILES (Ab) .. 2133
Gas to liquid. From—. "A classic of science" (Ab) 1837
Gas, A simple set-up for making water—, generator gas, and carbon monoxide. W. FLÖRKE (Ab) 1833
Gas, What is—? F. P. STROUP (Ab) 370
Gases. A device for trapping offensive—. G. C. WARE (Ar) 1475
Gases. Presentation of second law theory. II. A proof of the second law for systems composed of perfect—. T. H. HAZLEHURST, JR. (Ar) 1087
Gases. The demonstration of liquified—. H. RHEINBOLDT (Ab) 155
Gay-Lussac. Joseph Louis—(P) 1389
Gay-Lussac and Biot—(P) 1391
Gels. Rhythmic phenomena in—. J. M. JOHLIN (Ab) 1302
General chemistry. L. B. RICHARDSON (B) 1494
General chemistry. E. P. SCHOCH AND W. A. FELSING (B) 601
General chemistry laboratory practice: quantitative exercises. G. N. QUAM (Ar) 1474
General chemistry. A laboratory manual of—. L. B. RICHARDSON AND A. J. SCARLETT, JR. (B) 1665
General chemistry. Carbon compounds in—. A. J. CLARK (Ar) 99
General chemistry. Elements of—. J. A. BABOR, W. L. ESTABROOKE, AND A. LEHRMAN (B) 192
General chemistry. Introductory—. S. R. BRINKLEY (B) 1494
General chemistry. Laboratory exercises and problems in—. B. S. HOPKINS AND H. A. NEVILLE (B) 397
General chemistry. Laboratory manual in elements of—. J. A. BABOR, W. L. ESTABROOKE, AND A. LEHRMAN (B) .. 192
General chemistry. Laboratory manual to accompany—. H. G. DIETRICH AND E. B. KELSEY (B) 2005
General chemistry. Micro methods in—. E. V. HJORT AND H. E. WOODWARD (Ar) 1815
General chemistry. Modern conceptions and the teaching of—. E. A. WILDMAN (Ar) 92
General chemistry. Unifying lecture, quiz, and laboratory sections in—. G. G. TOWN (Ar) 1065
General chemistry in college. A study of the achievements of students of—. W. J. BRAY (Ab) 2142
General chemistry, including an introduction to qualitative analysis. A course in—. W. C. BRAY AND W. M. LATIMER (B) 1496
Generator gas, A simple set-up for making water gas,—and carbon monoxide. W. FLÖRKE (Ab) 1833
Genth. Frederick A.—(P) 719
Georgia prepares for a native white paper industry. STAFF REP. (Ab) 2001
Georgia School of Technology. Graduate assistantship available at—(CN) 599
German chemists, 1925. Statistical data concerning—(Ab) 166
Germanium—*See*, The discovery of the elements. XV. M. E. WEEKS (Ar) 1613
Germany. The Science Press of—(CN) .. 395
Germs had part in making coal (CN) 187
Giant molecules and synthetic silk. CAROTHERS AND HILL (Ab) 570
Gibbs. Wolcott—(P) 719
Girls' interests. Adapting elementary chemistry to—. A. LEVESCONTE (Ar) 1620
Glass. Notes on journal articles on nature of—. E. C. SULLIVAN (Ab) 570
Glass. Water-bath ring from—(Ab) 565
Glass blowing. Goggles for precision—(S) 214

Glass blowing. Laboratory instruction in—. R. A. BAKER (Ar) 203
Glass manufacture. Some recent developments in American—. A. SILVERMAN (Ab) 569
Glass reclaimable through heat treatment. Inferior—(CN) 779
Glass stopper puller. A—. F. R. PRATT (Ab) 2132
Glass stoppers from acid bottles. An apparatus for removing—E. R. ROSE (Ar) 149
Glass tubing. Heat transfer through industrial—. J. H. LITTLETON, JR. AND H. C. BATES (Ab) 1663
Glass tubing, Inserting—into tight-fitting rubber stoppers. V. N. PATWARDHAN (C) 1489
Glassware. Annealing laboratory—. B. T. EFFINGER (Ab) 1660
Glassware. Anti-bump laboratory—(Ab) 1127
Glass-working equipment for the small laboratory. C. B. DEWITT (Ar) 209
Glue and its place in industry. A brief account of—. H. B. SWEATT (Ar) ... 1553
Glycosides. The—. E. F. AND K. F. ARMSTRONG (B) 1137
Gmelin. Johann Friedrich—(P) 1388
Gmelin. Leopold—(P) 1400
Goessmann. C. A.—(P) 721
Goethe and science. A. C. CHANDLER (Ab) 1131
Goethe's relation to chemistry—in memory of the one hundredth anniversary of his death. D. H. WEBSTER (Ab) 1304
Goggles for precision glass blowing (S) 214
Gold mining; facts and figures. E. D. STRAUSS (Ab) 369
Gold rushes, Who said no more—? O. H. KNEEN (Ab) 568
Gold—*See*, The discovery of the elements. I. M. E. WEEKS (Ar) 5
Gold-Maker. The—. H. M. WOODBURN (Ar) 1783
Goodyear. Charles—(P) 983
Gore. Dr. George—(P) 1931
Gorham. John—(P) 689, 705
Grades in science. Reliability of teachers'—. R. C. PERRY (Ab) 573
Graduate assistantship available at Georgia School of Technology (CN) .. 599
Graduate fellowships of the American Association of University Women (CN) 383
Grants available in United States colleges and universities. Scholarships and fellowships (B) 970
Grants for chemistry research made by National Research Council (CN) 180
Graphical projection method of determining the coördinates of certain point-groups. A—. D. MCLACHLAN AND W. P. DAVEY (Ar) 1953
Graphical chemistry. A report on drills to decrease picture-memorizing in the study of—. H. P. HOWELLS (Ar) ... 1249
Gravitation. Old and new ideas regarding—. P. R. HEYL (Ar) 1897
Griscom. John—(P) 694
Group research (S) 1873
Growth-controlling extract being tried in cancer (S) 451
Guidance in chemistry. Vocational—. M. V. MCGILL (Ar) 885
Gums. The plant—. E. ANDERSON (Ar) 853
Guthrie, Samuel—, Jr. (1782–1848) in commemoration of the centenary of the discovery of chloroform. T. L. DAVIS (Ab) 760
Guyton de Morveau. Louis Bernard—(P) 637, 1232

Hall. Charles Martin—(P) 1408
Hall. The aluminum statue of Charles M.—(C) 1659
Halogen-ion detection. An improvement on the chloramine-T method of—. S. SUSSMAN (Ar) 1652
Halogen-ion separation and detection by means of chloramine-T. An improved method of—. E. M. GERSTENZANG (Ar) 318
Handy manometer for the organo-chemical laboratory. A—. M. Q. DOJA (Ar) . 1654
Hare. Robert—(P) 687, 706
Harmonica. Making a chemical—. R. B. WAILES (Ab) 1302
Hatchett. Charles—(P) 863
Haüy. René-Just—(P) 1387
Health. Chemistry and the quest for—. O. KAMM (Ar) 1719
Health. Heat and—*See*, Living in a world of science. M. MEISTER (B) ... 397
Health, The National Institute of—: Uncle Sam's organization for medical research. E. K. FOLTZ (Ar) 31
Heart of matter. Scientists of world cooperate in attack on—. (CN) 774
Heat and health—*See*, Living in a world of science. M. MEISTER (B) 397
Heat of reaction. M. E. CHARLESWORTH AND E. M. PATCH (Ab) 1490
Heat of the spectrum. "A classic of science" (Ab) 761
Heat transfer through industrial glass tubing. J. H. LITTLETON, JR. AND H. C. BATES (Ab) 1663
Heidelberg, Dr. Springer honored by—on golden anniversary (CN) 190
Heidelberg Alumni, Information on—desired (CN) 396
Helium—*See*, The discovery of the elements. XVIII. M. E. WEEKS (Ar) .. 2071
Helmholtz. Hermann (Ludwig Ferdinand) von—(P) 1424
Helvetius, Spinoza, and transmutation. M. NIERENSTEIN (Ab) 1664
Hendrix College. A new science building at—. F. REVES (CN) 374
Henry. William—(P) 1916
Heraclitus (P) 4
Héroult. Paul Louis Toussaint—(P) 1409
Herty. American Institute of Chemists Medal awarded—(CN) 581
Herty. Charles H.—(P) 581
Heterogeneous catalysis. J. A. MITCHELL (Ar) 261
Hidden crime clues bared by chemist's magic. E. W. TEALE (Ab) 368
High school. The teaching of chemistry in the—. J. H. CARD (Ab) 1132
High schools, Where are we going in our—? H. G. CAMPBELL (Ab) 1307
High-chromium steels in the chemical industry. F. M. BECKET (Ab) 947
High-school clubs. R. S. ELLWOOD (Ab) .. 763
High-school libraries in Illinois. A. W. CLEVENGER AND C. W. ODELL (B) 200
High-school science clubs. L. A. ASTELL AND C. W. ODELL (B) 1314
High-school chemistry. Construction of a diagnostic test in the mechanics and related fundamentals of—. J. E. MALIN (B) 1136
High-school chemistry. The pandemic idea in—. G. F. STROHAVER (Ab) 572
High-school chemistry. The teaching of —. J. O. FRANK (B) 2146
High-school chemistry, Contribution of—toward success in the college chemistry course. L. E. STEINER (Ar) 530
High-school laboratories. Necessity of fume hoods for—. R. E. DUNBAR AND L. O. SHULT (Ar) 919
High-school sciences. List of essential apparatus for use in—. T. C. HOLY AND D. H. SUTTON (B) 790
High-school students at Syracuse University. Vocational lectures for—(CN). 781
Hillebrand, Pen Portrait of William Francis—, 1853–1925. E. T. ALLEN (Ar) .. 72
Hillebrand. William Francis—(P) 72, 1241
Historical approach. The—(E) 1139

Historical sketch of logwood industry. ANON. (Ab) ... 569
Historical sketch of the Division of History of Chemistry, American Chemical Society. L. C. NEWELL (Ar) ... 667
History of calcium acid phosphate and the decomposition of bones with acids. On the early—. M. SPETER (Ab) ... 1132
History of chemical education in America —symposium ... 667–750
History of chemical education in America between the years 1820 and 1870. The—. C. A. BROWNE (Ar) ... 696
History of chemical education in the United States from 1870 to 1914. The—. H. HALE (Ar) ... 729
History of Chemistry, American Chemical Society. Historical sketch of the Division of—. L. C. NEWELL (Ar) ... 667
History of quinine. The—. C. H. LA-WALL (Ab) ... 949
History of science. Introduction to the—. Vol. II. From Rabbi ben Ezra to Roger Bacon. G. SARTON (B) ... 1665
History of science and technology. Some problems relating to—. G. BUGGE (Ar) ... 1567
History of science in the University of London. The teaching of the—. A. WOLF (Ab) ... 372
History of the British chemical industry. A—. S. MIALL (B) ... 787
History of the linking of substance with property. Contribution to the—. E. FÄRBER (Ab) ... 761
History of the municipal university in the United States. The—(B) ... 1842
Hitchcock. Edward—(P) ... 699
Hofmann. August Wilhelm von—(P) ... 1426
Holmia—*See*, The discovery of the elements. XVI. M. E. WEEKS (Ar). 1761, 1767
Home-made apparatus for the physics class. G. H. HYDE (Ab) ... 565
Hope. Thomas Charles—(P) ... 1049
Hopkins chemistry department. Notable American chemists will contribute to summer session of—(CN) ... 380
Hormone from spleen may control cancer. Possible—(CN) ... 568
Hormones may lead to new medicines. Chemical study of—(S) ... 348
Horsford. Eben N.—(P) ... 719
Hot-water funnel. A—. V. A. TOSCANI (Ab) ... 1660
How the last two elements were found. H. A. WEBB (Ab) ... 2141
How the new physics has changed the viewpoint of chemistry. W. A. NOYES, JR. (Ab) ... 756
How to prepare a patent application. R. E. SADTLER (Ab) ... 2004
How to understand chemistry. A. F. COLLINS (B) ... 1496
Howard. Norman—(P) ... 956
Hubbard. Oliver P.—(P) ... 699
Hum and bug. A. B. NICHOLAS (Ab) ... 167
Hundred years of Liebig's *Annalen der Chemie*. R. WILLSTÄTTER (Ab) ... 1305
Hung-Ching. T'ao—. T. L. DAVIS AND LU-CH'IANG WU (Ar) ... 859
Hutchinson. James—(P) ... 682
Hydrated salts by means of the nickel-crucible radiator. The determination of water in—. W. M. THORNTON, JR., R. ROSEMAN, AND M. NEISHLOSS (Ar) 1645
HCl resistance. Non-metals head list in—. S. L. TYLER (Ab) ... 2136
Hydrocyanic acid from methyl amine. Lecture experiment on the preparation of—. H. EMDE AND T. HORNEMANN (Ab) ... 158
Hydrogen from iron and water at room temperature and a suggested lecture experiment. L. T. ALEXANDER AND H. G. BYERS (Ar) ... 916
Hydrogen in industry. E. F. ARMSTRONG (Ab) ... 1303
Hydrogen liquefaction plant at the Royal Society Mond Laboratory. P. KAPITZA AND J. D. COCKCROFT (Ab) ... 948
Hydrogen. Neutron may be brick in building heavy-weight—(CN) ... 959
Hydrogen. Paracelsus and the discovery of—. L. DOBBIN (C) ... 1122
M. E. WEEKS (C) ... 1296
Hydrogen in organic substances by the micro-analytical method of Pregl. A modified absorption tube for the determination of—. W. J. BOYD AND W. ROBSON (Ab) ... 367
Hydrogen, Oxygen, nitrogen and—as constituents in metals. H. C. VACHER (Ar) ... 47
Hydrogen—*See*, The discovery of the elements. IV. M. E. WEEKS (Ar) ... 215
Hydrogen atom, Double—, new building stone of matter, is found (CN) ... 390
Hydrogen atoms proved by new test. Double weight—(CN) ... 776
Hydrogen chloride in a gas reaction double sphere. The synthesis of—. P. RISCHBIETH (Ab) ... 156
Hydrogen fluoride and its antidotes. The corrosive action of—. K. FREDENHAGEN AND M. WELLMANN (Ab) ... 2000
Hydrogen ions. H. T. S. BRITTON (B) ... 1669
Hydrogenation. Fat—. E. F. ARMSTRONG (Ab) ... 1128
Hydrogenation. Progress in petroleum—. ANON. (Ab) ... 1999
Hydrogen-ion comparator in the titration of aqueous extracts. Use of the—. H. J. ALMQUIST (Ar) ... 926
Hydrogen-ion concentrations for instructional purposes in high schools. The treatment of—. H. BARNSTORF (Ab). 565
Hydrogen-ion work and accurate titrations which can be prepared in one minute. Neutral standard for—. R. J. WILLIAMS AND C. M. TYMAN (Ab) ... 1662
Hydroxyl groups in bases. The quantitative determination of—. W. BARGHEER (Ab) ... 1835

Ice. Flakes of—(S) ... 516
Ice. Living organisms contain—(CN) ... 594
Ignorance. The conservation of—(S) ... 2083
Illustrierter Apotheker-kalender. 1932—. F. FERCHL (B) ... 1500
Importance of chemical developments in the textile industries during the industrial revolution. The—. J. H. PARK AND E. GLOUBERMAN (Ar) ... 1142
Improved indicator chart. An—(Ab) ... 1664
Improved method of halogen-ion separation and detection by means of chloramine-T. An—. E. M. GERSTENZANG (Ar) ... 318
Improved method of introducing the sample into a Victor Meyer vaporization chamber. An—. A. DIETZ (Ar) ... 2096
Improved methods of water purification aid textile industry. D. R. WEEDON (Ab) ... 569
Improvement in the Victor Meyer method. An—. A. R. RONZIO AND K. A. GAGOS (Ar) ... 1827
Improvement on the chloramine-T method of halogen-ion detection. An—. S. SUSSMAN (Ar) ... 1652
Improvised beaker holder. B. COONE (Ab) 755
Improvised spot plates. L. P. MITCHELL (C) ... 364
Improvised Victor Meyer apparatus. An—. I. STONE (Ab) ... 755
In defense of titres. W P. CORTELYOU (C) ... 1297
Inability to taste bitter chemical is hereditary (S) ... 245
Index. Rheology subject—. E. C. BINGHAM (Ab) ... 370

Index, Merck's—, an encyclopedia for the chemist, pharmacist, and physician (B) 198
Indicator chart. An improved— (Ab) 1664
Indicators for volumetric analysis. New—. W. H. BARRETT (Ab) 1490
Indices of the qualities of a faculty. H. L. HUMKE (Ab) 371
Indium—*See*, The discovery of the elements. XIII. M. E. WEEKS (Ar) 1429
Individualized science instruction in junior high. J. P. MCMURRAY (Ab) 1306
Individualized work in science. R. C. TREASHER (Ab) 1133
Industrial chemical calculations. O. A. HOUGEN AND K. M. WATSON (B) 605
Industrial chemistry. A. ROGERS (B) 786
Industrial compounds of fluorine. The—. G. M. DYSON (Ab) 568
Industrial coöperation in education of chemists. B. P. CALDWELL (Ar) 1435
Industrial stunts for the home chemists. R. B. WAILES (Ab) 1660
Industrial. Louisiana becomes—. H. A. LEVEY (Ab) 1837
Industrial education. Biennial survey of education in the United States, 1928–30. Chap. IV.— (B) 792
Industrial revolution. The importance of chemical developments in the textile industries during the—. J. H. PARK AND E. GLOUBERMAN (Ar) 1142
Industrial Chemistry, Eleventh Congress of—held in Paris (CN) 393
Industry. A brief account of glue and its place in—. H. B. SWEATT (Ar) 1553
Industry. A history of the British chemical—. S. MIALL (B) 787
Industry. Chemical research: a factor of prime importance in American—. C. M. A. STINE (Ar) 2032
Industry. High-chromium steels in the chemical—. F. M. BECKET (Ab) 947
Industry. Limestone and lime in—. M. F. GOUDGE (Ab) 370
Industry. Presidents and medalists of the Society of Chemical—. ANON. (Ab) 370
Industry. Research in the nickel—. P. D. MERICA (Ab) 758
Industry. The barium—. W. TRANTON (Ab) 946
Industry. Women in—. M. E. PIDGEON (B) 605
Industry in 1931. A review of the British chemical—. J. D. PRATT (Ab) 758
Industry during 1931. Developments in the chemical—. G. P. POLLITT (Ab) 757
Industry in 1931. The nitrogen—. E. B. MAXTED (Ab) 758
Industry, 1931. The aliphatic solvents—. ANON. (Ab) 758
Industry, The nitrogen—at the end of the year 1931. B. WAESER (Ab) 757
Inexpensive microscopic projector. An—. D. MADARIS (Ab) 1661
Inferior glass reclaimable through heat treatment (CN) 779
Information on Heidelberg Alumni desired (CN) 396
Ingenious Dr. Franklin. The—. N. G. GOODMAN (B) 601
Ink production. Printing—. ANON. (Ab) 2001
Inorganic chemistry. T. M. LOWRY (B) 785
Inorganic substances. A course of qualitative chemical analysis of—. O. F. TOWER (B) 967
Inorganic substances. The preparation of pure—. E. H. ARCHIBALD (B) 966
Insanity believed related to jellying of brain proteins (S) 512
Inserting glass tubing into tight-fitting rubber stoppers. V. N. PATWARDHAN (C) 1489
Institute of Metals American meeting postponed (CN) 597
Instruction. Effect of class-size upon the efficiency of—. J. H. H. SMITH (Ab) 2142
Instruction. Statistical data 1930 for chemical—. F. HOFMANN (Ab) 1306
Instruction in chemistry. The Reader's Guide as an aid to—. A. J. HAMMER (Ar) 1943
Instruction in glass blowing. Laboratory—. R. A. BAKER (Ar) 203
Instruction in junior high. Individualized science—. J. P. MCMURRAY (Ab) 1306
Instruction plan material for science classes. Chemistry. M. MEISTER (Ab) 2142
Instructor. Status of the junior-college— (B) 200
Instructors for recitation and laboratory in freshman chemistry. Effects of different—. F. E. BROWN AND R. R. COONS (Ar) 1949
Insulated clamps for ring stands. G. NADLER (Ab) 565
Insulin revealed as new kind of protein (CN) 591
Integrated project on copper, utilizing visual aids in various forms. An—. L. A. ASTELL (Ab) 762
Intelligent pupil. Teaching the more—. C. W. BOSE (Ab) 1133
Interesting source of iodine. An—. E. SCHANTL (Ab) 1661
Interesting sources of natural dyestuffs. C. D. MELL (Ab) 569
International Congress for Pure and Applied Chemistry. The Ninth— (CN) 598
International Congress for Pure and Applied Chemistry postponed. Madrid meeting of the Ninth— (CN) 783
International Union of Chemistry. U. S. delegates to— (CN) 382
Introduction to agricultural biochemistry. R. A. DUTCHER AND D. E. HALEY (B) 788
Introduction to a study of the rôle of Lavoisier in the history of chemistry. H. METZGER (Ab) 2139
Introduction to chemistry. An—. A pandemic text. J. A. TIMM (B) 1839
Introduction to organic chemistry. An—. I. GARARD (B) 1670
Introduction to organic chemistry. An—. A. LOWY AND B. HARROW (B) 1498
Introduction to the history of science. Vol. II. From Rabbi ben Ezra to Roger Bacon. G. SARTON (B) 1665
Introductory course in physical chemistry. An—. W. H. RODEBUSH AND E. K. RODEBUSH (B) 1839
Introductory general chemistry. S. R. BRINKLEY (B) 1494
Introductory general chemistry. Laboratory manual to accompany—. H. G. DIETRICH AND E. B. KELSEY (B) 2005
Introductory story of baking powders. An—. O. S. RASK 1340
Invents tiny apparatus to regulate radium treatment (CN) 779
Investigation of college teaching by the American Association of University Professors (CN) 384
Investigation of the setting of plaster of Paris. C. S. GIBSON AND R. N. JOHNSON (Ab) 1128
Investigations of atomic weights by Theodore William Richards. G. S. FORBES (Ar) 453
Iodine. An interesting source of—. E. SCHANTL (Ab) 1661
Iodine. Fortunes and misfortunes in—. P. F. HOLSTEIN (Ab) 2000
Iodine—*See*, The discovery of the elements. XVII. M. E. WEEKS (Ar) 1919
Ionic explanation of the separation of the cations of the tin subgroup with the reagent sodium hydroxide. An—. W. D. WARREN (C) 1486
Iridium—*See*, The Discovery of the elements. VIII. M. E. WEEKS (Ar) 1024

Iron mining in Utah. G. MARTIN (Ab)... 568
Iron. Magnet has no attraction for hot—(S)... 54
Iron. Oxygen content in—varies with temperature (S)... 526
Iron—*See*, The discovery of the elements. I. M. E. WEEKS (Ar)... 6
Iron hydroxide. White—. D. H. F. MAGER (Ab)... 158
Isolation of vitamin B followed new line of research (CN)... 777
Isotherm, The adsorption—? S. CASPE (Ar)... 907
Isotopes of lithium, sodium, and potassium. The—. K. T. BAINBRIDGE (Ab)... 1130

J. T. Baker Chemical Company fellowships in analytical chemistry, 1931–32. The—(CN)... 177
Jabir ibn Hayyan. Studies on—. P. KRAUS (Ab)... 760
Jackson. Charles Thomas—(P)... 713
Janssen. Pierre Jules César—(P)... 2070
Jefferson's efforts toward the decimalization of United States weights and measures. C. D. HELLMAN (Ab)... 761
Jena, Die Chemie in—von Rolfinck bis Knorr (1629–1921). F. CHEMNITIUS (B)... 969
Jenny, Pierre and—receive the 1931 Chilean nitrate of soda nitrogen research award (CN)... 177
Jewett. Frank Fanning—(P)... 1406
John B. Stetson University. New chemical society at—(CN)... 599
Johnson. Samuel William—(P)... 716
Johnson. Walter R.—(P)... 1589
Joint meeting of the Physics Club of New York and the Chemistry Teachers' Club of New York (CN)... 781
Joseph Priestley and his place in the history of science. P. HARTOG (Ab)... 571
JOURNAL. Concerning the—(E)... 1315
Journals. The cost of scientific—(Ab)... 2144
Joy. C. A.—(P)... 721
Jungfleisch. Émile-Clément—(P)... 1607
Junior-college instructor. Status of the—(B)... 200

Kellogg elected secretary emeritus of National Research Council (CN)... 382
Kem: An instructive chemistry card game. D. BROWN (Ab)... 2142
Kentucky. The niter caves of—. R. N. MAXSON (Ar)... 1846
Kiliani. Heinrich—(P)... 1908
Kiliani. Heinrich—*See*, My life and work. H. KILIANI (Ar)... 1908
Kirchhoff. Gustav Robert—(P)... 1418, 1421
Kirwan. Richard—(P)... 1050
Klaproth. Martin Heinrich—(P)... 464, 1235
Klaus. Karl Karlovich—(P)... 1028
Kopp, Hermann—as a chemist. B. BESSMERTNY (Ab)... 2139
Kopp, Hermann—as an historian. E. O. VON LIPPMANN (Ab)... 2139
Knorr (1629–1921). Die Chemie in Jena von Rolfinck bis—. F. CHEMNITIUS (B)... 969
Knowledge. Useless chemical—. W. M. DEHN (Ar)... 1075
Krypton—*See*, The discovery of the elements. XVIII. M. E. WEEKS (Ar) 2073
Kunckel von Löwenstern. Johann—(P)... 17

La Mer gives Priestley lectures at Pennsylvania State College (CN)... 960
Label book. Titles for a chemical—. COM. REP. (Ar)... 344
Labels. Book of chemical—(B)... 2150
Laboratories. Necessity of fume hoods for high-school—. R. E. DUNBAR AND L. O. SHULT (Ar)... 919
Laboratories of St. Andrew's University. Fire damages physical and chemical—. (CN)... 395
Laboratory exercises and problems in general chemistry. B. S. HOPKINS AND H. A. NEVILLE (B)... 397
Laboratory experiment based on the Freundlich surface activity equation. A—. G. W. BENNETT (Ar)... 517
Laboratory instruction in glass blowing. R. A. BAKER (Ar)... 203
Laboratory manual in elements of general chemistry. J. A. BABOR, W. L. ESTABROOKE, AND A. LEHRMAN (B)... 192
Laboratory manual of general chemistry. A—. L. B. RICHARDSON AND A. J. SCARLETT, JR. (B)... 1665
Laboratory manual of qualitative analysis. B. E. HARTSUCH (B)... 2147
Laboratory manual to accompany introductory general chemistry. H. G. DIETRICH AND E. B. KELSEY (B)... 2005
Laboratory manual. Microchemical—. F. EMICH (B)... 1668
Laboratory notes and why (E)... 2011
Laboratory. Aluminum utility exemplified in a modern research—. W. S. MCARDLE (Ar)... 834
Laboratory. Electricity in the—. E. C. WEAVER (Ar)... 142
Laboratory. Glass-working equipment for the small—. C. B. DEWITT (Ar)... 209
Laboratory. Student accuracy in the physical-chemical—. E. C. GILBERT AND G. C. WARE (Ar)... 103
Laboratory at the University of Texas. The new chemical—. W. A. FELSING (CN)... 169
Laboratory at University of Freiburg. New physical chemistry—(CN)... 395
Laboratory chemistry test, Persing—. Forms A and B. K. M. PERSING (B). 1314
Laboratory course in physical chemistry. An equilibrium experiment for an introductory—. E. J. SHAW AND M. E. HYDE (C)... 364
Laboratory exercise. The making of ozone as a—. G. M. LISK (Ar)... 2099
Laboratory for chemical microscopy. A small—. R. D. COOL (Ar)... 2084
Laboratory guide. Chemistry workbook and—. M. V. MCGILL AND G. M. BRADBURY (B)... 193
Laboratory in freshman chemistry. Effects of different instructors for recitation and—. F. E. BROWN AND R. R. COONS (Ar)... 1949
Laboratory methods compared. Lecture-demonstration and individual—. V. F. PAYNE (Ar) I. The literature... 932
II. The distribution of time... 1097
III. Experimental... 1277
Laboratory of chemical microscopy at the Polytechnic Institute of Brooklyn. New—(CN)... 392
Laboratory of organic chemistry. Comparison of eight types of small fractionating columns from the viewpoint of usefulness in the student—. J. K. SIMONS AND E. C. WAGNER (Ar)... 122
Laboratory precautions against fire. Some elementary—(S)... 1522
Laboratory preparations for the course in organic chemistry. New—. III. Dibutyl ether from butanol-1. G. R. AND M. T. YOHE (Ar)... 1268
Laboratory sections in general chemistry. Unifying lecture, quiz, and—. G. G. TOWN (Ar)... 1065
Laboratory storeroom. A system for eliminating bookkeeping in lending articles from the—. C. W. TOTTEN (Ar) 1252
Laboratory technic. An experiment in—. H. J. LONG (Ar)... 913
Laboratory technic. Solid carbon dioxide in—. D. H. KILLEFFER (Ab)... 755
Laboratory practice, General chemistry—; Quantitative exercises. G. N. QUAM (Ar)... 1474

Lactose: its properties and uses. D. M. CORROTT (Ab) ... 759
Lamp with flexible support. Ring stand and table— (Ab) ... 367
Lamy. Claude Auguste—(P) ... 2078
Langmuir wins *Popular Science Monthly* $10,000 Annual Award for outstanding scientific achievements (CN) ... 770
Langmuir. Irving— (P) ... 770
Langmuir award. Dr. Oscar Rice receives annual A. C. S.— (Ab) ... 2144
Langmuir award. Young Harvard chemist gets— (CN) ... 951
Lanthana—*See*, The discovery of the elements. XVI. M. E. WEEKS (Ar) ... 1753
Law does not forbid shipment of radioactive substances (S) ... 939
Law of patents for chemists. The—. J. ROSSMAN (B) ... 1135
Lavoisier. Antoine Laurent— (P) ... 232, 233, 637, 641
Lavoisier. Boyle's conception of element compared with that of—. T. L. DAVIS (Ab) ... 760
Lavoisier, A newly discovered note by—from October 20, 1772. M. SPETER (Ab) ... 948
Lavoisier, Introduction to a study of the rôle of—in the history of chemistry. H. METZGER (Ab) ... 2139
Lavoisier, Priestley, and Black. J. BELL (Ab) ... 2140
Lavoisier, The rôle of—in the history of the sciences. A. MIELI (Ab) ... 2140
Lavoisier—*See*, A chapter in historical chemistry. E. F. SMITH (Ar) ... 635
Lavoisier's three notes on combustion: 1772. A. N. MELDRUM (Ab) ... 2139
Lead—*See*, The discovery of the elements. I. M. E. WEEKS (Ar) ... 7
Lead dioxide. The quantitative decomposition of—. E. WINTERHALDER (Ab) ... 1835
Leclerc. Georges Louis—, Comte de Buffon—(P) ... 1022
Learning processes at the higher levels. The psychology of the—. C. H. JUDD (Ab) ... 1133
Lecture demonstrations with a purpose. EDIT. (Ab) ... 1133
Lecture experiment for the demonstration of the energy of canal rays. E. BADEREN (Ab) ... 156
Lecture experiment on the preparation of hydrocyanic acid from methyl amine. H. EMDE AND T. HORNEMANN (Ab) ... 158
Lecture experiment. Hydrogen from iron and water at room temperature and a suggested—. L. T. ALEXANDER AND H. G. BYERS (Ar) ... 916
Lecture program of Loyola Chemists' Club (CN) ... 180
Lecture, quiz, and laboratory sections in general chemistry. Unifying—. G. G. TOWN (Ar) ... 1065
Lecture-demonstration and individual laboratory methods compared. V. F. PAYNE (Ar) I. The literature ... 932
II. The distribution of time ... 1097
III. Experimental ... 1277
Leisure. Careers from—(S) ... 1473
Lémery. Nicolas—(P) ... 15
Length of class periods. The—. J. B. PAUL (Ab) ... 1307
Leonardo da Vinci (P) ... 222
Leveling vessel for producing constant pressure in gas analytical investigations. A new—. W. HERBERT AND W. WAHLIG (Ab) ... 160
Libau, Von—bis Liebig: Chemikerköpfe und -Laboratorien. F. FERCHL (B) ... 789
Libraries in Illinois. High-school—. A. W. CLEVENGER AND C. W. ODELL (B) ... 200
Liebig. Justus von— (P) ... 1401
Liebig, Von Libau bis—: Chemikerköpfe und -Laboratorien. F. FERCHL (B) ... 789
Liebig's *Annalen der Chemie*. Hundred years of—. R. WILLSTÄTTER (Ab) ... 1305
Life and work of Otto Wallach. The—. L. RUZICKA (Ab) ... 1304
Life. Examinations in the university of—. O. D. YOUNG (Ab) ... 573
Lightning adds fertility to earth (CN) ... 593
Lignin in wood. The relation of cellulose to—. K. FREUDENBERG (Ar) ... 1171
Lime contributes to southwestern development. S. P. ARMSBY (Ab) ... 1837
Limestone and lime in industry. M. F. GOUDGE (Ab) ... 370
Liquid. From gas to—. "A classic of science" (Ab) ... 1837
List of essential apparatus for use in high-school sciences. T. C. HOLY AND D. H. SUTTON (B) ... 790
Lister's antiseptic treatment. "A classic of science" (Ab) ... 571
Lists eight forerunners of cancer of digestive tract (S) ... 606
Literate researchers (S) ... 91
Lithium—*See*, The discovery of the elements. IX. M. E. WEEKS (Ar) ... 1042
Lithium, sodium, and potassium. The isotopes of—. K. T. BAINBRIDGE (Ab) ... 1130
Liver enzyme makes vitamin A from carotene (S) ... 556
Living in a world of science. Water and air; Energy and power; Heat and health. M. MEISTER (B) ... 397
Living organisms as chemical reagents. A. I. KENDALL (Ar) ... 2013
Living organisms contain ice (CN) ... 594
"Living" periodic chart of the elements. A—. H. H. FILLINGER (Ar) ... 1807
Lockyer. Sir Joseph Norman— (P) ... 2072
Logic. The anatomy of—(pathological) (E) 1843
Logwood industry. Historical sketch of—. ANON. (Ab) ... 569
London. Science in the city of—. E. C. SMITH (Ab) ... 165
Looking forward in sulfur mining. J. H. POLLARD (Ab) ... 1837
Louisiana becomes industrial. H. A. LEVEY (Ab) ... 1837
Loyola Chemists' Club. Lecture program of— (CN) ... 180
Löwig. Carl— (P) ... 1924
Lubricants. Auto of future to demand better— (S) ... 523
Lutecia—*See*, The discovery of the elements. XVI. M. E. WEEKS (Ar) ... 1769

Mâ'al-Waragâ. Report on the—. H. E. STAPLETON AND H. HUSAIN (Ab) ... 2140
Machine age and their educational implications. Certain problems of the—. H. S. MOORE (Ab) ... 1306
Maclean. John— (P) ... 680
Macneven. William— (P) ... 703
Madison. James— (P) ... 679
Madrid meeting of the Ninth International Congress for Pure and Applied Chemistry postponed (CN) ... 783
Magnesium. The determination of the equivalent weight of—. V. E. REEF (Ar) ... 524
Magnesium—*See*, The discovery of the elements. X. M. E. WEEKS (Ar) ... 1051
Magnet has no attraction for hot iron (S) ... 54
Magnetic properties of metal crystals changed by "dilution" (S) ... 46
Magnetism from the electric current. "A classic of science" (Ab) ... 1132
Magnus. Albertus— (P) ... 12
Magnus, Albertus—as chemist. F. PANETH (Ab) ... 1304
Magnus, Albertus—: His scientific views. T. GREENWOOD (Ab) ... 948
Magnus. Gustav— (P) ... 478
Making a chemical harmonica. R. B. WAILES (Ab) ... 1302
Making of ozone as a laboratory exercise. The—. G. M. LISK (Ar) ... 2099

Mallet. J. W.— (P) 721
Mandragora. The—. EDIT. (Ab) 949
Manganese. The determination of—. R. G. HARRY (Ab) 1303
Manganese by the periodate method. A new and simplified colorimeter especially designed for the colorimetric estimation of—. G. F. SMITH AND V. R. SULLIVAN (Ar) 1461
Manganese dioxide, an experiment to show the catalytic action of—on the decomposition of potassium chlorate and the measurement of the products of the reaction. J. E. MACKENZIE (Ar) 1111
Manganese—*See*, The discovery of the elements. III. M. E. WEEKS (Ar) 27
Manometer. A sensitive direct-reading mercury—. H. W. MELVILLE, JR. (Ab) 565
Manometer for the organo-chemical laboratory. A handy—. M. Q. DOJA (Ar) 1654
Mansur Al-Kamily. E. J. HOLMYARD (Ab) 760
Manufacture of rolled plate. E. LUTZ (Ab) 569
Manufacture of sulfuric acid. The—. S. I. LEVY (Ab) 1491
Manufacture. Our greatest decade in chemical—. O. WILSON (Ab) 1663
Many centennial anniversaries occur this year (CN) 585
Marcet. Alexander— (P) 481
Marggraf. Andreas Sigismund— (P) 22
Marignac. Jean Charles Galissard de— (P) 1758
Marvels of modern chemistry. B. L. CLARKE (B) 2145
Master's degree. Requirements for the—. COM. REP. (Ab) 1493
Material for science classes, Instruction plan—. Chemistry. M. MEISTER (Ab) 2142
Materials. Dye industry searches for cheaper plant—. H. MILLER (Ab) .. 2136
Materials. Modern— (Ab) 2137
Materials for chemical plant construction. Choosing and using—. W. S. CALCOTT AND T. R. OLIVE (Ab) 2135
Mathematics for chemists. Report of the committee on—(Ar) 2108
Mayow. Johannes—(P) 224
Mayow, John—in contemporary setting. T. S. PATTERSON (Ab) 760
Mayow's place in chemistry. John—. ANON. (Ab) 948
Maxwell. James Clerk—. E. H. HALL (Ab) 571
Measurement of electron rays is improved (CN) 593
Measurements. Apparatus for electrical resistance— (B) 1138
Measurements announced. Dr. Segel's appointment as specialist in educational tests and— (CN) 181
Measures. Jefferson's efforts toward the decimalization of United States weights and—. C. D. HELLMAN (Ab) 761
Measuring device. A convenient mercury—. L. V. CLIFCORN AND W. S. THOMPSON (Ab) 1660
Meat industry. Science and the—. T. MORAN (Ab) 1129
Mechanically stirred melting-point tube. E. F. DEGERING (Ar) 928
Medal. Priestley Memorial and—. C. L. PARSONS (Ar) 643
Medal, American Institute of Chemists—awarded Herty (CN) 581
Medal, Richards—awarded A. A. Noyes (CN) 582
Medalists of the Society of Chemical Industry. Presidents and—. ANON. (Ab) 370
Medicines. Chemical study of hormones may lead to new— (S) 348
Melting-point and temperature. Device for the simultaneous observation of—. E. W. BLANK (Ar) 1975
Melting-point tube. Mechanically stirred —. E. F. DEGERING (Ar) 928
Membranes. A simple device for holding ultrafiltration—. C. BREEDIS (Ab) 755
Mendel. Lafayette B.— (P) 582
Mendel's sixtieth birthday celebrated. Dr.— (CN) 583
Mendeléeff. Dmitri— (P) 1598, 1601
Merck's index, an encyclopedia for the chemist, pharmacist, and physician (B) 198
Mercurous chloride by sublimation. Modified technic for first group separation. Removal of large amounts of—. E. W. BLANK (Ar) 527
Mercury. A simple apparatus for distillation of—. M. KLEIBER (Ab) 1127
Mercury. The purification of—. M. ZUPPKE (Ab) 1834
Mercury measuring device. A convenient —. L. V. CLIFCORN AND W. S. THOMPSON (Ab) 1660
Mercury—*See*, The discovery of the elements. I. M. E. WEEKS (Ar) 8
Metal. A new protected— (CN) 781
Metal. Beryllium as a new industrial—. J. BECKER (Ab) 568
Metal crystals changed by "dilution." Magnetic properties of— (S) 46
Metal powder products (Ab) 1999
Metallurgical researches of Michael Faraday. F. C. T. (Ab) 761
Metallurgy's contribution to accuracy in time-measuring. G. E. SHUBROOKS (Ar) 1358
Metals in electrochemistry. The—. L. KAHLENBERG (Ab) 568
Metals in the use of man. C. H. DESCH (Ab) 2003
Metals. A demonstration experiment on the diffusion of—. E. W. BLANK (Ar) 317
Metals. Modern—. (Ab) 2137
Metals. Oxygen, nitrogen, and hydrogen as constituents in—. H. C. VACHER (Ar) 47
Metals. Uses for the rarer— (S) 458
Metals in relation to their properties. The nature of—. E. E. SCHUMACHER (Ab) 756
Metals of group IV, The newer—. "A classic of science" 1491
Metals, The protection of—by metallic films. E. S. HEDGES (Ab) 163
Metals in non-metallic solvents, Solutions of—: some of their physical and chemical properties. C. A. KRAUS (Ab) 1130
Method for the crystallization of sugars and other organic substances. A convenient—. H. TAUBER AND I. S. KLEINER (Ar) 1970
Method for the preservation of book bindings. A—. J. P. SANDERS (Ab) 2135
Method may make ramie cheaply available. New— (S) 902
Method of halogen-ion separation and detection by means of chloramine-T. An improved—. E. M. GERSTENZANG (Ar) 318
Method of introducing the sample into a Victor Meyer vaporization chamber. An improved—. A. DIETZ (Ar) 2096
Methods of teaching chemistry. E. B. AMMIDOWN (Ab) 1133
Methods compared. Lecture-demonstration and individual laboratory—. V. F. PAYNE (Ar) I. The literature 932
II. The distribution of time 1097
III. Experimental 1277
Methods of teaching science. A college course in—. V. GEGENHEIMER (Ar) .. 1439
Methods, Micro—in general chemistry. E. V. HJORT AND H. E. WOODWARD (Ar) 1815
Methyl amine. Lecture experiment on the preparation of hydrocyanic acid from—. H. EMDE AND T. HORNEMANN (Ab) 158

Meyer. (Julius) Lothar—(P) 1597
Mica. Cellophane as a substitute for—. W. E. HAMMOND (Ab) 2133
Michael Faraday and the theory of electrolytic conduction. H. HARTLEY (Ab). 370
Micro methods in general chemistry. E. V. HJORT AND H. E. WOODWARD (Ar). 1815
Microanalysis of fabrics. ANON. (Ab) 570
Microanalysis of fabrics. E. R. SCHWARZ (Ab) 567
Microanalysis of yarns. E. R. SCHWARZ (Ab) 567
Microanalysis. A system of qualitative—. C. J. ENGELDER AND W. SCHILLER (Ar) 1636
Micro-analytical method of Pregl. - A modified absorption tube for the determination of hydrogen in organic substances by the—. W. J. BOYD AND W. ROBSON (Ab) 367
Microchemical laboratory manual. F. EMICH (B) 1668
Micro-molecular-weight determination by vapor-density methods. E. W. BLANK AND M. L. WILLARD (Ar) 1819
Microscope sees what happens to cells whirled at high speed (CN) 186
Microscopic projector. An inexpensive—. D. MADARIS (Ab) 1661
Microscopy of cotton hairs. H. ELLIS (Ab) 567
Microscopy of starch. The—. H. ELLIS (Ab) 567
Microscopy of the cotton cellulose fiber. R. N. TITUS, C. J. STAUD, AND H. LEB. GRAY (Ar) 114
Correction (C) 1296
Microscopy. A small laboratory for chemical—. R. D. COOL (Ar) 2084
Microscopy. Experiments in—. Demonstrating Brownian movement and Cottrell precipitation. E. W. BLANK (Ab) 2133
Microscopy. Textile—. H. ELLIS (Ab)... 567
Microscopy at Cornell University. Summer courses in chemical—(CN) 961
Microscopy at the Polytechnic Institute of Brooklyn. New laboratory of chemical—(CN) 392
Mikromethoden der organischen Chemie in vergleichender Darstellung. Quantitative analytische—. C. WEYGAND (B) 400
Milk enriched with vitamin D. J. A. TOBEY (Ab) 1302
Milk industry. The—. J. GOLDING (Ab) 1129
Milk pasteurization. H. RAISTRICK (Ab). 1129
Milling salt in Texas. H. B. COOLEY (Ab). 1836
Mineral and chemical resources of the Mojave Desert. Studies in the—. P. L. TURRILL (Ar) I 1318
II 1530
III. The inspection trip 2040
Mining sulfur for world consumption. EDIT. STAFF (Ab) 1837
Mining, Gold—: facts and figures. E. D. STRAUSS (Ab) 369
Minutes of Denver meeting, Division of Chemical Education, A. C. S. (Ar) ... 2100
Minutes of New Orleans meeting, Division of Chemical Education, A. C. S. (Ar) 1477
Mirrors and B-batteries as student projects. H. L. SLICHENMYER (Ar) 1648
Mitchill. Samuel L.—(P) 686, 703
Mixing gas and alcohol (Ab) 2134
Mixture of definite composition. A simple method for calculating the proportions of various substances of known composition to give a—. H. V. HOUSEMAN (C) 941
Model essays in organic chemistry. D. D. KARVÉ AND G. D. ADVANI (B) 1312
Models, A new type of atomic—for organic chemistry. J. B. ENTRIKIN (Ar) 2081
Models as a visual aid in the teaching of chemistry. Atomic and molecular structure—. A. L. POULEUR (Ar) 301
Models, Molecular—in the elementary organic laboratory. I. W. R. BRODE AND C. E. BOORD (Ar) 1774
Modern chemistry. Marvels of—. B. L. CLARKE (B) 2145
Modern conceptions and the teaching of general chemistry. E. A. WILDMAN (Ar) 92
Modern materials (Ab) 2137
Modern metals (Ab) 2137
Modern nitric acid production demands special alloys. T. MCKNIGHT (Ab).. 2136
Modern physics needs no electrons, says Swann (CN) 589
Modern practice in disposal and recovery of textile wastes. W. E. HADLEY (Ab).. 569
Modern processes in wool dyeing. G. WALLACE (Ab) 570
Modern theory of acids and bases. The—. J. E. CAVELTI (Ab) 760
Modified absorption tube for the determination of hydrogen in organic substances by the micro-analytical method of Pregl. A—. W. J. BOYD AND W. ROBSON (Ab) 367
Modified technic for first group separation. Removal of large amounts of mercurous chloride by sublimation. E. W. BLANK (Ar) 527
Moissan. A monument to Henri—(CN). 393
Moissan. Henri—(P) 868, 1932, 1936
Mojave Desert. Studies in the mineral and chemical resources of the—. P. L. TURRILL (Ar) I 1318
II 1530
III. The inspection trip 2040
Molecular fragments and oxidation processes. J. R. BATES (Ar) 1219
Molecular models in the elementary organic laboratory. I. W. R. BRODE AND C. E. BOORD (Ar) 1774
Molecular structure. Recent applications of X-rays in investigations of—. W. C. PIERCE (Ar) 845
Molecular-weight, Micro- —determination by vapor-density methods. E. W. BLANK AND M. L. WILLARD (Ar).. 1819
Molecules observe speed limit in new experiments (CN) 392
Molecules. The size and shape of—. E. MACK, JR. (Ab) 162
Molecules form clumps. Water—(S).... 71
Molybdenum—*See*, The discovery of the elements. V. M. E. WEEKS (Ar)... 462
Monument to Henri Moissan. A—(CN). 393
Monroe gas field. Carbon black production in the—. EDIT. STAFF REPORT (Ab) 1836
Morgan. John—(P) 1580
Morphine. The first—. "A classic of science" (Ab) 2140
Morveau. Louis Bernard Guyton de—(P). 637, 1232
Mosander. Carl Gustav—(P) 1753
Motion picture, The application of the—to the problem of the rising cost of education. B. A. AUGHINBAUGH (Ab) 161
Motion pictures in public schools. Use of—(CN) 595
Municipal university in the United States. The history of the—(B) 1842
Museum. Visual aids in chemical education. The—. A. M. DOYLE (Ar).... 1791
Museum of Science and Industry, Chicago. From alchemy to chemistry in the—(CN) 168
Museums in the United States. Recent progress and condition of—(S) 1806
Muslim Association for the Advancement of Science. The—(CN) 180
My life and work. H. KILIANI (Ar) 1897

Nail, What holds that—? ANON. (Ab).... 759
Nason. H. B.—(P) 721
National Academy of Sciences. The—(Ab) 2004

National Institute of Health, The—. Uncle Sam's organization for medical research. E. K. FOLTZ (Ar) 31
National Research Council. Appropriations for grants-in-aid by the—(CN).. 953
National Research Council. Grants for chemistry research made by—(CN).. 180
National Research Council. Kellogg elected secretary emeritus of—(CN). 382
Natural chemical resources of Australian plant products. Part II. A. R. PENFOLD (Ar) 429
Natural ethics (S) 2089
Natural gas. Adaptation of the Bunsen burner to—. G. R. ROBERTSON (Ar). 1963
Natural periodic system including the rare earths. A—. J. E. STARECK (Ar)... 1625
Natural sciences. The—. R. A. MILLIKAN (Ab) 2004
Nature of metals in relation to their properties. The—. E. E. SCHUMACHER (Ab) 756
Nebraska. Chemistry at—. F. W. UPSON (Ab) 1664
Necessity of fume hoods for high-school laboratories. R. E. DUNBAR AND L. O. SHULT (Ar) 919
Need of a broader vision among chemists. J. READ (Ab) 372
Needed objectives for our schools. V. MORAWETZ (Ab) 572
Neodymia—*See*, The discovery of the elements. XVI. M. E. WEEKS (Ar)... 1763
Neon—*See*, The discovery of the elements. XVIII. M. E. WEEKS (Ar)..... 2073
Neutral standard for hydrogen-ion work and accurate titrations which can be prepared in one minute. R. J. WILLIAMS AND C. M. TYMAN (Ab)..... 1662
Neutron may be brick in building heavy-weight hydrogen (CN)..... 959
Neutron. And now the—. J. G. CROWTHER (Ab) 1835
Neutron. European scientists study—. V. COFMAN (Ab) 1490
New air drier for analytical balances. A—. E. LÖWENSTEIN (Ab) 1127
New and simplified colorimeter especially designed for the colorimetric estimation of manganese by the periodate method. A—. G. F. SMITH AND V. R. SULLIVAN (Ar) 1461
New anesthetic found according to prediction (S) 415
New artificial radiation resembles cosmic rays (S) 121
New blood test for cancer developed by Fuchs (CN) 389
New chapter of Alpha Chi Sigma fraternity (CN) 599
New chemical laboratory at the University of Texas. The—. W. A. FELSING (CN) 169
New chemical society at John B. Stetson University (CN) 599
New code system for dispensing qualitative analysis unknowns. A—. A. L. TAYLOR (Ar) 1811
New era in synthetic organic chemistry. A—. E. E. REID (Ar) 1561
New explosive made from natural gas (S).. 284
New extraction dialyzer. A—. H. RAAB (Ab) 160
New gasoline process endangers sulfur industry (S) 521
New indicators for volumetric analysis. W. H. BARRETT (Ab) 1490
New Jersey. Range of subjects taught, teaching load, and preparation in science of the science teachers of—. R. D. REED (Ar) 326
New laboratory of chemical microscopy at the Polytechnic Institute of Brooklyn (CN) 392
New laboratory preparations for the course in organic chemistry. III. Dibutyl ether from butanol-1. G. R. AND M. T. YOHE (Ar) 1268
New leveling vessel for producing constant pressure in gas analytical investigations. A—. W. HERBERT AND W. WAHLIG (Ab) 160
New method may make ramie cheaply available (S) 902
New Orleans Meeting of the A. C. S. (CN). 576
New Orleans Meeting of the A. C. S.—*See*, Division of Chemical Education, A. C. S., in this index.
New physical chemistry laboratory at University of Freiburg (CN)..... 395
New process of photography by ultra-violet light (S) 300
New process saves fruit by detecting minute scratches (S) 83
New protected metal. A— (CN)..... 781
New qualitative test for aluminum. A—. K. KERSHNER AND R. D. DUFF (Ar).. 1271
New quicksilver discoveries. W. M. WEIGEL (Ab) 759
New radium discoveries made in Canadian Northwest (CN)..... 780
New radium in Canada will break world monopoly (S) 499
New science building at Hendrix College. A—. P. REVES (CN) 374
New science building at The Phillips Exeter Academy. W. SEGERBLOM (CN). 766
New science hall at Fairmont State Teachers College. H. F. ROGERS (CN).... 952
New scientific council to standardize colors (CN) 189
New South Wales, with special reference to the conditions existing in the United States of America. The teaching of chemistry in the secondary schools of—. R. W. STANHOPE (B)..... 1314
New super X-ray tube equal of world's total radium (CN) 189
New synthetic rubber recalls German war product (CN) 185
New type of atomic models for organic chemistry. A—. J. B. ENTRIKIN (Ar) 2081
New type of frozen fruit being developed (S) 858
Newer metals of group IV. The—. "A classic of science" 1491
Newlands. John Alexander Reina— (P).. 1595
Newly discovered note by Lavoisier from October 20, 1772. A—. M. SPETER (Ab) 948
Nichols Medals. Conant awarded Chandler and— (CN) 579
Nickel as a catalyst in chemical reactions. P. SABATIER (Ab) 1130
Nickel industry. Research in the—. P. D. MERICA (Ab) 758
Nickel plating. Small battery charger supplies current for—. R. H. ROGERS (Ab) 2133
Nickel tubing resists fatigue. R. WORTHINGTON (Ab) 1491
Nickel—*See*, The discovery of the elements. III. M. E. WEEKS (Ar).... 24
Nickel-crucible radiator. The determination of water in hydrated salts by means of the—. W. M. THORNTON, JR., R. ROSEMAN, AND M. NEISHLOSS (Ar) 1645
Nickel-steel alloy—*See*, On time. ANON. (Ab) 758
Nicotine. J. H. REID (Ab) 568
Nilson. Lars Fredrik— (P) 1609
1932 Illustrierter Apotheker-kalender. F. FERCHL (B) 1500
Ninth International Congress for Pure and Applied Chemistry. The— (CN)... 598
Ninth International Congress for Pure and Applied Chemistry postponed. Madrid meeting of the— (CN)..... 783
Niter caves of Kentucky. The—. R. N. MAXSON (Ar) 1846

Nitric acid by direct synthesis avoids absorption. Concentrated—. G. FAUSER (Ab) 2000
Nitric acid production demands special alloys. Modern—. T. McKNIGHT (Ab) 2136
Nitrogen and phosphorus. "A classic of science" (Ab) 2140
Nitrogen industry at the end of the year 1931. The—. B. WAESER (Ab) 757
Nitrogen industry in 1931. The—. E. B. MAXTED (Ab) 758
Nitrogen. A demonstration: Fixation of atmospheric—. H. L. OLSSON (Ar) 1829
Nitrogen, Apparatus for illustrating the arc method for the fixation of—and also for the formation of ozone. H. C. DOANE (Ar) 1113
Nitrogen. Fixed—. H. A. CURTIS, *editor* (B) 2006
Nitrogen, Oxygen, — and hydrogen as constituents in metals. H. C. VACHER (Ar) 47
Nitrogen—*See.* The discovery of the elements. IV. M. E. WEEKS (Ar) 219
No chemical elements heavier than uranium, scientist concludes (CN) 951
Nobel chemistry and medicine awards for 1931 to Bergius, Bosch, and Warburg (CN) 173
Nomenclature. Chemical—*See,* A chapter in historical chemistry. E. F. SMITH (Ar) 635
Non-metals head list in HCl resistance. S. L. TYLER (Ab) 2136
Non-resident Baker lectureship in chemistry at Cornell expanded (CN) 782
Normal schools, Statistics of teachers' colleges and—1929–30 (B) 970
Northeastern University. Chemical engineering on the coöperative plan at—. C. P. BAKER AND W. C. WHITE (Ar) 894
Norton. John Pitkin— (P) 715
Norton. Thomas H.— (P) 1241
Notable American chemists will contribute to summer session of Hopkins chemistry department (CN) 380
Note on the Arabic mss. on alchemy in the Asafiyah Library, Hyderrâbâd (Deccan), India. H. E. STAPLETON (Ab) 2140
Notes on blowpipe analysis. N. KNIGHT (B) 605
Notes on journal articles on nature of glass. E. C. SULLIVAN (Ab) 570
Notes on the early teaching of chemistry in the University of Pennsylvania, the Central High School of Philadelphia, and the Franklin Institute of Pennsylvania. J. S. HEPBURN (Ar) 1576
Noyes. Arthur A.— (P) 582
Noyes. Richards Medal awarded A. A.— (CN) 582
Nuclei. The structure of the atomic—. E. RUTHERFORD (Ab) 2135
Nucleic acids. P. A. LEVENE AND L. W. BASS (B) 198
Nutrition. Chemistry of food and—. H. C. SHERMAN (B) 1671

Obituary of Prof. Wilhelm Ostwald (1853–1932). An—. A. FINDLAY (Ab) 2138
Objectives. Editorial— (E) 1501
Objectives for our schools. Needed—. V. MORAWETZ (Ab) 572
Oceanography at the University of Washington (CN) 577
Oersted. Hans Christian— (P) 1397
Ohio State Educational Conference, Twelfth annual—to meet in Columbus in April (CN) 596
Oil from coal. The production of—. L. J. ROGERS (Ab) 163
Oil well opens new fields two miles down. Deepest—. S. GLEASON (Ab) 574
Oils. Smoke, flash, and fire points of certain fixed—. W. H. DICKHART (Ab) 1303
Old and new ideas regarding gravitation. P. R. HEYL (Ar) 1897
Old tune: new words (E) 1
On being different (E) 2011
On ozone. R. A. WORSTELL (Ar) 291
On time. ANON. (Ab) 758
On the discovery of palladium. A. M. WHITE AND H. B. FRIEDMAN (Ar) 236
On the early history of calcium acid phosphate and the decomposition of bones with acids. M. SPETER (Ab) 1132
One of several paintings entitled "Der Alchimist" by David Teniers, the Younger (1610–90) (F) *See,* opp. p. 1139
Opium. Vitamin C derived from poison found in— (CN) 778
Oregon state system of higher education (B) 2010
Orfila. Mathieu Joseph Bonaventure— (P) 471
Organic analysis. Qualitative—. O. KAMM (B) 2148
Organic catalytic reactions. J. A. MITCHELL (Ar) 59
Organic chemistry. A new era in synthetic —. E. E. REID (Ar) 1561
Organic chemistry. A new type of atomic models for—. J. B. ENTRIKIN (Ar) 2081
Organic chemistry. An introduction to—. I. GARARD (B) 1670
Organic chemistry. An introduction to—. A. LOWY AND B. HARROW (B) 1498
Organic chemistry. Comparison of eight types of small fractionating columns from the viewpoint of usefulness in the student laboratory of—. J. K. SIMONS AND E. C. WAGNER (Ar) 122
Organic chemistry. Model essays in—. D. D. KARVÉ AND G. D. ADVANI (B) 1312
Organic chemistry. New laboratory preparations for the course in—. III. Dibutyl ether from butanol-1. G. R. AND M. T. YOHE (Ar) 1268
Organic chemistry. Recent advances in—. A. W. STEWART (B) 194
Organic chemistry. Some modern developments of—. D. E. WORRALL (Ab) 1128
Organic chemistry. The use of unknowns in teaching—. L. OVSTER (Ar) 910
Organic chemistry, Parts I and II. Perkin and Kipping's—. F. S. AND F. B. KIPPING (B) 1311
Organic chemistry 1929–31. Progress report in the field of—. W. HÜCKEL AND W. GELMROTH (Ab) 2002
Organic compounds. The free energies of some—. G. S. PARKS AND H. M. HUFFMAN (B) 2149
Organic laboratory. Molecular models in the elementary—. I. W. R. BRODE AND C. E. BOORD (Ar) 1774
Organic laboratory. Small fractionating columns as standard equipment for the student—. E. C. WAGNER (Ar) 320
Organic symposium at Yale, December 28–30, 1931 (CN) 175
Organic syntheses (Collective Vol. I). H. GILMAN (B) 1499
Organic syntheses. Vol. XII. F. C. WHITMORE, *editor-in-chief* (B) 1670
Organischen Chemie in vergleichender Darstellung. Quantitative analytische Mikromethoden der—. C. WEYGAND (B) 400
Organisms as chemical reagents. Living —. A. I. KENDALL (Ar) 2013
Organization of freshmen chemistry classes. O. M. SMITH (Ar) 1946
Organization of science clubs in the high school. D. D. PETTIT (Ar) 1260
Origin of the gamma rays. The—. E. RUTHERFORD (Ab) 2134
Osmium—*See.* The discovery of the elements. VIII. M. E. WEEKS (Ar) 1024
Ostwald. Wilhelm—. P. GÜNTHER (Ab) 2002
Ostwald. Wilhelm—. L. MICHAELIS (Ab) 2002
Ostwald. Wilhelm—. W. NERNST (Ab) 1664

Ostwald. Wilhelm—. P. WALDEN (Ab). 1304
Ostwald on chemical energy. "A classic of science" (Ab). 1664
Our greatest decade in chemical manufacture. O. WILSON (Ab). 1663
Outlines of theoretical chemistry. F. H. GETMAN AND F. DANIELS (B). 602
Oxford. A chemist at—. J. S. CHAMBERLAIN (Ab). 1134
Oxidation processes. Molecular fragments and—. J. R. BATES (Ar). 1219
Oxidation reactions with ferricyanides. L. ROSENTHALER (Ab). 1661
Oxygen content in iron varies with temperature (S). 526
Oxygen. nitrogen, and hydrogen as constituents in metals. H. C. VACHER (Ar). 74
Oxygen. Experiments with—. R. B. WAILES (Ab). 1660
Oxygen. Oxymeter, a new apparatus for the quantitative determination of—. K. W. HETZEL (Ab). 1998
Oxygen—*See*, The discovery of the elements. IV. M. E. WEEKS (Ar). 221
Oxymeter, a new apparatus for the quantitative determination of oxygen. K. W. HETZEL (Ab). 1998
Oyster. The—. Modern science comes to the support of an ancient food. H. D. PEASE (Ar). 1674
Ozone. Apparatus for illustrating the arc method for the fixation of nitrogen, and also for the formation of—. H. C. DOANE (Ar). 1113
Ozone. On—. R. A. WORSTELL (Ar). 291
Ozone in ozonized air. A simple quantitative method of determining—. P. KRAIS AND H. MERKERT (Ab). 1302
Ozone, The making of—as a laboratory exercise. G. M. LISK (Ar). 2099

Packing of spheres. The—. L. PAULING (Ab). 1128
Paint. The relation between corrosion and—. W. H. J. VERNON AND L. A. JORDAN (Ab). 1303
Palladium. On the discovery of—. A. M. WHITE AND H. B. FRIEDMAN (Ar). 236
Palladium—*See*, The discovery of the elements. VIII. M. E. WEEKS (Ar). 1022
Pandemic idea in high-school chemistry. The—. G. F. STROHAVER (Ab). 572
Pandemic text—*See*, An introduction to chemistry. J. A. TIMM (B). 189
Paper. Federal chemists show how acids damage— (S). 2031
Paper industry. Georgia prepares for a native white—. STAFF REP. (Ab). 2001
Paper manufacture. Silicates in—. ANON. (Ab). 1302
Paracelsus and the discovery of hydrogen. L. DOBBIN (C). 1122
M. E. WEEKS (C). 1296
Paracelsus, Theophrastus. The alchemy and the alchemistic cosmogony of—. F. STRUNZ (Ab). 2140
Paraffin. A convenient method of applying liquid—. N. SCHAPIRO (Ab). 1660
Parsons. Charles L.—(with E. C. Franklin and Edgar Fahs Smith) (P). 623
Parsons, Dr. Charles L., American Chemical Society honors—(CN). 951
Parsons, Dr. Charles L., Presentation of the Priestley medal to—(Ab). 2144
Passivity in the light of recent research. Faraday's views on—. E. S. HEDGES (Ab). 165
Pasteurization. Milk—. H. RAISTRICK (Ab). 1129
Patent application. How to prepare a—. R. E. SADTLER (Ab). 2004
Patented, Should scientific discoveries be —? E. L. SEVRINGHAUS (Ab). 2144
Patents. The University of Wisconsin research— (CN). 384
Patents. What the chemist should know about—. J. ROSSMAN (Ar). 486
Patents for chemists. The law of—. J. ROSSMAN (B). 1135
Pectography and the constitution of colloidal solutions. E. S. HEDGES (Ab). 946
Peel. Sir Robert— (P). 1166
Péligot. Eugène— (P). 469
Pelletier. Bertrand— (P). 1020
Pen portrait of William Francis Hillebrand, 1853–1925. E. T. ALLEN (Ar). 72
Pennsylvania high school named for Edgar Fahs Smith (CN). 764
Pennsylvania State College. La Mer gives Priestley lectures at— (CN). 960
Peptide hydrolysis—*See*, Recent advances in enzyme chemistry. A. K. BALLS (Ab). 163
Periodic chart of the elements. A "living" —. H. H. FILLINGER (Ar). 1807
Periodic system including the rare earths. A natural—. J. E. STARECK (Ar). 1625
Periodic system—*See*, The discovery of the elements. XIV. M. E. WEEKS (Ar). 1593
Periods. The length of class—. J. B. PAUL (Ab). 1307
Perkin and Kipping's organic chemistry, Parts I and II. F. S. AND F. B. KIPPING (B). 1311
Perkin Medal. Burgess receives— (CN). 383
Persing laboratory chemistry test. Forms A and B. K. M. PERSING (B). 1314
Personal reminiscences of Dr. Smits. F. E. C. SCHEFFER (Ab). 165
Peter. A. M.—(P). 1850
Petroleum pays increasing toll to corrosion. S. GILL (Ab). 2136
Petroleum hydrogenation. Progress in—. ANON. (Ab). 1999
Petroleum technology. Southwest still a proving ground for—. S. D. KIRKPATRICK (Ab). 1836
Pettersson. Sven Otto— (P). 1236
pH—*See*, The teaching of the theory of the dissociation of electrolytes. II. M. KILPATRICK, JR. AND M. L. KILPATRICK (Ar). 1010
Pharmaceutical discoveries (Ab). 165
Pharmaceutical education. W. F. RUDD (Ar). 272
Pharmacology, The relation of—to hygiene, public health and chemistry. D. I. MACHT (Ar). 1876
Pharmacy a profession of service. H. W. HAGGARD (Ab). 372
Phillips Exeter Academy. New science building at The—. W. SEGERBLOM (CN). 766
Phonograph records. Science talks for schools available on—(CN). 773
Phosphorus. Nitrogen and—. "A classic of science" (Ab). 2140
Phosphorus—*See*, The discovery of the elements. II. M. E. WEEKS (Ar). 16
Photochemistry. D. W. G. STYLE (B). 197
Photoelectric cells in chemical engineering. Applications of—. C. J. SMITHELLS (Ab). 2002
Photographing the birth of an atom. W. D. HARKINS (Ab). 1662
Photographs of chemists—*See*, titles in italics in this Subject Index.
Photography. Early steps in—. "A classic of science" (Ab). 1305
Photography by ultra-violet light. New process of— (S). 300
Physical chemistry. An elementary text primarily for biological and premedical students. L. J. GILLESPIE (B). 196
Physical chemistry. An equilibrium experiment for an introductory laboratory course in—. E. J. SHAW AND M. E. HYDE (C). 364
Physical chemistry. An introductory course in—. W. H. AND E. K. RODEBUSH (B). 1839

Physical chemistry. Difference quotients and their application to certain types of empirical equations in—. T. DE VRIES (Ar) 2094
Physical chemistry. Fundamentals of—. E. C. H. DAVIES (B) 2148
Physical chemistry. Premedical—. D. L. RANDALL (Ar) 1096
Physical chemistry, An equilibrium experiment for an introductory laboratory course in—. Method of extrapolating to zero concentration. C. V. KING (C) 150
Physical chemistry laboratory. An experiment on a bimolecular reaction for the—. C. B. HURD (Ar) 513
Physical-chemical laboratory. Student accuracy in the—. E. C. GILBERT AND G. C. WARE (Ar) 103
Physico-chemical experiments. Accuracy of certain—. R. J. DEGRAY (Ar) 903
Physico-chemico processes in colloidal media. E. S. HEDGES (Ab) 946
Physics cannot predict fate of the universe (CN) 590
Physics. American Institute of— (CN)... 180
Physics. Report on the experimental use of units in—. A. W. HURD (Ab) 1306
Physics class. Home-made apparatus for the—. G. H. HYDE (Ab) 565
Physics Club of New York and the Chemistry Teachers' Club of New York. Joint meeting of the— (CN) 718
Physics has changed the viewpoint of chemistry. How the new—. W. A. NOYES, JR. (Ab) 756
Physics, Modern—needs no electrons, says Swann (CN) 589
Picture-memorizing in the study of graphical chemistry. A report on drills to decrease—. H. P. HOWELLS (Ar) 1249
Pierre and Jenny receive the 1931 Chilean nitrate of soda nitrogen research award (CN) 177
Pipe line problems in the southwest. S. GILL (Ab) 1837
Pipets. A convenient method of cleaning —. J. R. LEWIS (Ab) 1660
Pittsburgh. Summer courses at— (CN).. 961
Place of chemistry in the carpet industry. The—. G. E. HOPKINS (Ab) 2143
Plan for introducing biographical material into science courses. A—. J. H. SAMMIS (Ar) 900
Plan for prevention of crowding in special apparatus rooms. A—. H. B. WYLIE (Ar) 2090
Plans of the Progressive Education Association. R. WALTERS (Ab) 1838
Plant chemistry. Suitable projects in—. H. F. SCHAEFFER (Ar) 1103
Plant construction. Choosing and using materials for chemical—. W. S. CALCOTT AND T. R. OLIVE (Ab) 2135
Plant gums. The—. E. ANDERSON (Ar). 853
Plant materials. Dye industry searches for cheaper—. H. MILLER (Ab) 2136
Plant products. Natural chemical resources of Australian—. Part II. A. R. PENFOLD (Ar) 429
Plaster of Paris. Investigation of the setting of—. C. S. GIBSON AND R. N. JOHNSON (Ab) 1128
Plastic. Benzyl cellulose: a new British— (Ab) 1128
Plastics industry. Casein as a basis for a —. K. HAUPT (Ab) 1662
Plate. Manufacture of rolled—. E. LUTZ (Ab) 569
Plates. Improvised spot—. I. P. MITCHELL (C) 364
Platinum. D. MCDONALD (Ab) 1303
Platinum—*See*, The discovery of the elements. VIII. M. E. WEEKS (Ar)... 1017
Platinum ware. Cleaning—. A. SATTLER (Ab) 1660
Plattner. Carl Friedrich— (P) 1422
Plays—*See*, The gold-maker. H. M. WOODBURN (Ar) 1783
Pliny the Elder (P) 5
Point-groups. A graphical projection method of determining the coördinates of certain—. D. MCLACHLAN AND W. P. DAVEY (Ar) 1953
Polonium. Experiments for the demonstration of the radioactivity of—. F. HOFFMANN (Ab) 155
Polytechnic Institute of Brooklyn. New laboratory of chemical microscopy at the— (CN) 392
Pontin. Dr. (M. M. af Pontin)— (P) 1048
Pope. Sir William—. ANON. (Ab) 1304
Popular chemistry. Writing—. W. DAVIS (Ar) 1874
Popular Science Monthly $10,000 Annual Award for outstanding scientific achievements. Langmuir wins—(CN) 770
Porter. J. A.— (P) 719
Portland cement. Exhibit available on manufacture of—. M. A. BERNS (C). 1486
Portraits—*See*, titles in italics in this Subject Index.
Positions open in various colleges and universities to graduate students majoring in chemistry (Ar) 349
Possible hormone from spleen may control cancer (CN) 588
Potassium permanganate as an antidote for snake venom. A. M. REESE (Ab)... 2135
Potassium. The isotopes of lithium, sodium, and—. K. T. BAINBRIDGE (Ab) 1130
Potassium—*See*, The discovery of the elements. IX. M. E. WEEKS (Ar)..... 1035
Potatoes that blacken detected by new test (S) 784
Potentiality. Cashing a— (E) 1845
Potentiometric titrations. I. M. KOLTHOFF AND N. H. FURMAN (B) 398
Potentiometric titrations. A simple and convenient set-up for—. N. ALLEN (Ar) 1973
Power. Energy and—*See*, Living in a world of science. M. MEISTER (B)... 397
Practical analysis with the spectroscope. C. C. NITCHIE (Ab) 368
Practical sensitometry. H. BAINES (Ab)... 1128
Practice of spectrum analysis with Hilger instruments, The—, including a note on the various types of emission spectra. F. TWYMAN (B) 791
Practice-exercises and objective tests in chemistry. The twentieth century—. G. M. BRADBURY AND M. V. MCGILL (B) 194
Praseodymia—*See*, The discovery of the elements. XVI. M. E. WEEKS (Ar). 1763
Precious alloys should find wider applications (S) 146
Predicting undiscovered elements. "A classic of science" (Ab) 371
Pregl. A modified absorption tube for the determination of hydrogen in organic substances by the micro-analytical method of—. W. J. BOYD AND W. ROBSON (Ab) 367
Preliminary announcement, fall meeting of the A. C. S., Denver, Colo. (Ar).... 1116
Preliminary announcement, spring meeting of the A. C. S., New Orleans, La. (CN) 379
Premedical physical chemistry. D. L. RANDALL (Ar) 1096
Premedical requirements in chemistry. COM. REP. (Ar) 1117
Premedical student. Chemistry in the college curriculum of the—. R. I. GRADY (Ar) 111
Premedical students. Physical chemistry. An elementary text primarily for biological and—. L. J. GILLESPIE (B)... 196
Preparation and preservation of large crystals of chrome alum. The—. L. J. FLIEDNER (Ar) 1453

Preparation of emulsions. The—. W. CLAYTON (Ab)....946, 1129
Preparation of pure inorganic substances. The—. E. H. ARCHIBALD (B)..... 966
Preparation of rhombic sulfur crystals. C. H. STONE (C)..... 941
Preparation of rubidium. The—. S. GRAVES (Ar)..... 1274
Preparations for the course in organic chemistry. New laboratory—. III. Dibutyl ether from butanol-1. G. R. AND M. T. YOHE (Ar)..... 1268
Prescott, Albert B.— (P)..... 738
Presentation of second law theory. II. A proof of the second law for systems composed of perfect gases. T. H. HAZLEHURST, JR. (Ar)..... 1087
Presentation of the Priestley medal to Dr. Charles L. Parsons (Ab)..... 2144
Present-day knowledge of coal. H. A. CURTIS (Ab)..... 1999
Preservation of corner-stone records. U. S. BUR. STANDARDS NOTE (Ab)..... 1129
President. The American college—. H. J. LASKI (Ab)..... 950
Presidents and medalists of the Society of Chemical Industry. ANON. (Ab)..... 370
Press. The—. J. F. FINLEY (Ab)..... 2004
Press of Germany. The Science— (CN)..... 395
Pressure in gas analytical investigations. A new leveling vessel for producing constant—. W. HERBERT AND W. WAHLIG (Ab)..... 160
Pressure regulator for vacuum distillations. A simple—. R. H. MUNCH (Ar)..... 1275
Priestley, Joseph— (P)..... 225, 683
Priestley, and Black. Lavoisier, —. J. BELL (Ab)..... 2140
Priestley and his place in the history of science. Joseph—. P. HARTOG (Ab)... 571
Priestley lectures at Pennsylvania State College. La Mer gives— (CN)..... 960
Priestley memorial and medal. C. L. PARSONS (Ar)..... 643
Priestley medal, Presentation of the—to Dr. Charles L. Parsons (Ab)..... 2144
Princeton University obtains chapter of Sigma Xi (CN)..... 961
Principles (E)..... 1844
Principles of chemistry. J. H. HILDEBRAND (B)..... 1495
Principles of chemistry. J. H. ROE (B)... 2005
Printing ink production. ANON. (Ab).... 2001
Private high schools and academies, Statistics of—1929–30 (B)..... 970
Problems affecting the publishing business and the teaching profession. W. P. JOHNSON (Ab)..... 371
Problems in general chemistry. Laboratory exercises and—. B. S. HOPKINS AND H. A. NEVILLE (B)..... 397
Processes. Borrowed— (Ab)..... 1836
Processes and principles of chemical engineering. Unit—. J. C. OLSEN (B).. 1840
Production of oil from coal. The—. L. J. ROGERS (Ab)..... 163
Profession. Problems affecting the publishing business and the teaching—. W. P. JOHNSON (Ab)..... 371
Profession of service. Pharmacy a—. H. W. HAGGARD (Ab)..... 372
Program for the educational section of the midwest regional meeting of the American Chemical Society (CN)..... 960
Program, Final—of the Division of Chemical Education, the Denver meeting of the A. C. S., August 22–26, 1932 (Ar).. 1592
Progress of chemistry, 1931. Annual reports on the—. Vol. XXVIII. THE CHEMICAL SOCIETY (London) (B).... 1137
Progress in petroleum hydrogenation. ANON. (Ab)..... 1999
Progress report in the field of organic chemistry 1929–31. W. HÜCKEL AND W. GELMROTH (Ab)..... 2002
Progressive Education Association. Plans of the—. R. WALTERS (Ab)..... 1838
Progressive education be progressive, Dare—? G. S. COUNTS (Ab)..... 1308
Project material. Sources of—. H. W. HANSEN (Ar)..... 1078
Project on copper, utilizing visual aids in various forms. An integrated—. L. A. ASTELL (Ab)..... 762
Projection method of determining the coördinates of certain point-groups. A graphical—. D. MCLACHLAN AND W. P. DAVEY (Ar)..... 1953
Projector. An inexpensive microscopic—. D. MADARIS (Ab)..... 1661
Projects. Mirrors and B-batteries as student—. H. L. SLICHENMYER (Ar).... 1648
Projects in plant chemistry. Suitable—. H. F. SCHAEFFER (Ar)..... 1103
Projects of the secondary-school level carried on in California cities during 1930–31. Research—. F. C. TOUTON (Ab)..... 371
Property. Contribution to the history of the linking of substance with—. E. FÄRBER (Ab)..... 761
Proposal for better coördination of school and college work. A—. W. M. AIKIN (Ab)..... 1838
Proposed 1932 college testing program of the coöperative test service. The—. J. B. JOHNSON (Ab)..... 572
Protection of metals by metallic films. The—. E. S. HEDGES (Ab)..... 163
Protein. Insulin revealed as new kind of— (CN)..... 591
Proteins. Insanity believed related to jellying of brain— (S)..... 512
Psychological assays (S)..... 1635
Psychology of the learning processes at the higher levels. The—. C. H. JUDD (Ab)..... 1133
Publications of Edgar Fahs Smith (Ar).... 655
Publications. Record of current educational— (B) July 1–Sept. 30, 1931.... 792
Oct.–Dec. 1931..... 1138
Jan.–Mar., 1932..... 2010
Publishing business and the teaching profession. Problems affecting the—. W. P. JOHNSON (Ab)..... 371
Pugh, Egan— (P)..... 721
Pulp and paper advance fight against corrosion loss. J. D. MILLER (Ab)..... 2136
Pupil checks the teacher. The—. A. E. F. SCHAFFLE (Ab)..... 573
Pupil looks at the teacher. The—. C. C. GUILFORD (Ab)..... 1838
Pure mathematics may hold key to quantum theory (S)..... 600
Purification of mercury. The—. M. ZUPPKE (Ab)..... 1834
Pyrolysis temperatures. The significance of—. J. F. NORRIS (Ar)..... 1890
Pyrosulfuryl chloride, $S_2Cl_2O_5$. W. STAHL (Ab)..... 369

Qualitative analysis. A course in general chemistry, including an introduction to—. W. C. BRAY AND W. M. LATIMER (B)..... 1496
Qualitative analysis. A short course in—. F. E. BROWN (B)..... 1666
Qualitative analysis. Adding interest and reality to—. H. C. GRAHAM (Ar).... 1225
Qualitative analysis. Analytical chemistry. Vol. I.—. F. P. TREADWELL AND W. T. HALL (B)..... 1309
Qualitative analysis. Laboratory manual of—. B. E. HARTSUCH (B)..... 2147
Qualitative analysis unknowns. A new code system for dispensing—. A. L. TAYLOR (Ar)..... 1811
Qualitative analysis with the help of many new reactions. Systematic—. C. J. VAN NIEUWENBURG (Ab)..... 1128

Qualitative and quantitative analysis—*See*, Analytical chemistry. J. C. WARE (B) ... 195
Qualitative chemical analysis of inorganic substances. A course of—. O. F. TOWER (B) ... 967
Qualitative microanalysis. A system of—. C. J. ENGELDER AND W. SCHILLER (Ar) 1636
Qualitative organic analysis. O. KAMM (B) 2148
Qualitative test for aluminum. A new—. K. KERSHNER AND R. D. DUFF (Ar) ... 1271
Qualities of a faculty. Indices of the—. H. L. HUMKE (Ab) ... 371
Quantitative analysis. E. G. MAHIN (B) .. 1667
Quantitative analysis. A course in—. J. S. GUY AND A. SKEEN (B) ... 1309
Quantitative analysis. Analytical chemistry. A textbook for a one-year course in qualitative and—. J. C. WARE (B) 195
Quantitative analysis. Silver-bismuth alloys—. G. W. BATCHELDER AND L. C. HURD (Ar) ... 929
Quantitative analytische Mikromethoden der organischen Chemie in vergleichender Darstellung. C. WEYGAND (B). 400
Quantitative decomposition of lead dioxide. The—. E. WINTERHALDER (Ab) ... 1835
Quantitative determination of ammonia without distillation. The—. P. SORS (Ab) ... 1128
Quantitative determination of hydroxyl groups in bases. The—. W. BARGHEER (Ab) ... 1835
Quantitative exercises. General chemistry laboratory practice: —. G. N. QUAM (Ar) ... 1474
Quantitative experiments in elementary chemistry. II. A measure of catalysis. R. D. BILLINGER (Ar) ... 144
Quantitative method of determining ozone in ozonized air. A simple—. P. KRAIS AND H. MERKERT (Ab) ... 1302
Quantitative spectroscopy with special reference to the "ratio quantitative system." S. J. LEWIS (Ab) ... 1999
Quantum theory. Pure mathematics may hold key to— (S) ... 600
Quartz takes up fire-fighting. G. LOCKHART (Ab) ... 2135
Quasi-quicksilver (Ab) ... 1836
Quick-freezing solves food problems. D. H. KILLEFFER (Ab) ... 369
Quicksilver discoveries. New—. W. M. WEIGEL (Ab) ... 759
Quicksilver. Quasi- — (Ab) ... 1836
Quinine. The history of—. C. H. LAWALL (Ab) ... 949
Quiz, and laboratory sections, Unifying lecture, —in general chemistry. G. G. TOWN (Ar) ... 1065

Radiation. Solar—. C. G. ABBOT (Ar) .. 416
Radiation resembles cosmic rays. New artificial— (S) ... 121
Radiator. The determination of water in hydrated salts by means of the nickel-crucible—. W. M. THORNTON, JR., R. ROSEMAN, AND M. NEISHLOSS (Ar). 1645
Radicals. A survey of the chemistry of free—. M. GOMBERG (Ar) ... 439
Radioactive substances. Law does not forbid shipment of— (S) ... 939
Radioactive waters and radium emanators. Warns against— (S) ... 154
Radioactivity. G. ROSENGARTEN (Ab) ... 370
Radioactivity and theorizing. B. WILLIS (Ab) ... 1663
Radioactivity of polonium. Experiments for the demonstration of the—. F. HOFFMAN (Ab) ... 155
Radium finds application in inspecting steel welds (S) ... 98
Radium, life-giving element, deals death in the hands of quacks. M. MOK (Ab) .. 1662
Radium strike in Canadian wilds. C. McLEOD (Ab) ... 1129
Radium. New super X-ray tube equal of world's total— (CN) ... 189
Radium discoveries made in Canadian Northwest. New— (CN) ... 780
Radium emanators. Warns against radioactive waters and—(S) ... 154
Radium gamma rays. Cosmic rays again shown like—(S) ... 784
Radium in Canada will break world monopoly. New— (S) ... 499
Radium monopoly. Breaking the world's —. D. L. WATSON (Ab) ... 1128
Radium treatment. Invents tiny apparatus to regulate— (CN) ... 779
Raman medallion (CN) ... 175
Ramie cheaply available. New method may make— (S) ... 902
Rammelsberg, Carl Friedrich— (P) ... 879
Ramsay Memorial Laboratory of Chemical Engineering, University of London (CN) ... 394
Ramsay, Sir William—(P) ... 2067, 2074
Range of subjects taught, teaching load, and preparation in science of the science teachers of New Jersey. R. D. REED (Ar) ... 326
Rare earth elements—*See*, The discovery of the elements. XVI. M. E. WEEKS (Ar) ... 1751
Rare earths. A natural periodic system including the—. J. E. STARECK (Ar) ... 1625
Rare gases in air. Animals die when deprived of— (CN) ... 589
Raw material resources await chemical development. Vast—. W. M. WEIGEL (Ab) ... 1836
Rayleigh, Lord—(P) ... 2066
Rayon. Cotton stalks, a new source of—. P. A. CARMICHAEL (Ab) ... 369
Rayon. Distinction between viscose and cuprammonium—. J. BRENNAN (Ab) 570
Rayon. The future of—. ANON. (Ab) ... 370
Rayon manufacture. Devising plant and process for simplified—. T. R. OLIVE (Ab) ... 1663
Reaction. Heat of—. M. E. CHARLESWORTH AND E. M. PATCH (Ab) ... 1490
Reactions. Organic catalytic—. J. A. MITCHELL (Ar) ... 59
Reactivity. Comparison of chemical—. H. ADKINS (Ar) ... 1865
Reader's Guide as an aid to instruction in chemistry. The—. A. J. HAMMER (Ar) 1943
Reading material for pupils and teachers. Science—. C. M. PRUITT (B) ... 1672
Reagent. The early history of the first chemical—. M. NIERENSTEIN (Ab) .. 761
Reagents. Living organisms as chemical —. A. I. KENDALL (Ar) ... 2013
Recent advances in enzyme chemistry. The mechanism of peptide hydrolysis. A. K. BALLS (Ab) ... 163
Recent advances in organic chemistry. A. W. STEWART (B) ... 194
Recent applications of X-rays in investigations of molecular structure. W. C. PIERCE (Ar) ... 845
Recent developments in a chemical age. A. L. FERGUSON (Ar) ... 1181
Recent developments in activated carbon. M. SCHOFIELD (Ab) ... 568
Recent developments in the rubber industry. G. OENSLAGER (Ar) ... 974
Recent progress and condition of museums in the United States (S) ... 1806
Recent theses in education (B) ... 970
Recitation and laboratory in freshman chemistry. Effects of different instructors for—. F. E. BROWN AND R. R. COONS (Ar) ... 1949
Record of current educational publications (B) July 1–Sept. 30, 1931 ... 792
Oct.–Dec., 1931 ... 1138
Jan.–Mar., 1932 ... 2010
Recovery of tin-bearing wastes. V. FROELICHER (Ab) ... 569

Regnault. Henri Victor— (P) 1599
Reich. Ferdinand— (P) 1429
Relation between corrosion and paint. The—. W. H. J. VERNON AND L. A. JORDAN (Ab) 1303
Relation of cellulose to lignin in wood. The—. K. FREUDENBERG (Ar) 1171
Relation of pharmacology to hygiene, public health and chemistry. The—. D. I. MACHT (Ar) 1876
Relativity theory. The fundamentals of the—. M. TALMEY (Ab) 760
Relativity theory still stands. Basis of Einstein— (S) 373
Reliability of teachers' grades in science. R. C. PERRY (Ab) 573
Remsen. Ira— (P) 736, 747, 2069
Remsen memorial collection. The— (CN) 585
Repetition of experiments reported by James Woodhouse in 1808 relative to the production of ammonia. K. S. LOVE AND P. H. EMMETT (Ar) 1748
Report of the committee on mathematics for chemists (Ar) 2108
Report of the committee on the teaching load for chemistry teachers (Ar) 2111
Report on drills to decrease picture-memorizing in the study of graphical chemistry. A—. H. P. HOWELLS (Ar) ... 1249
Report on the experimental use of units in physics. A. W. HURD (Ab) 1306
Report on the Mâ'al-Waragâ. H. E. STAPLETON AND H. HUSAIN (Ab) 2140
Reports, Annual—on the progress of chemistry, 1931. Vol. XXVIII. THE CHEMICAL SOCIETY (London) (B) 1137
Requirements for the master's degree. COM. REP. (Ab) 1493
Research. Group— (S) 1873
Research for teachers (E) 1140
Research for the undergraduate. R. E. KIRK (Ar) 280
Research in the nickel industry. P. D. MERICA (Ab) 758
Research in the undergraduate curriculum of the course in chemistry. G. B. L. SMITH (Ar) 285
Research projects of the secondary-school level carried on in California cities during 1930-31. F. C. TOUTON (Ab). 371
Research. Education for commercial—. F. J. CURTIS (Ar) 55
Research. Faraday's views on passivity in the light of recent—. E. S. HEDGES (Ab) 165
Research. Schools and—. J. THORPE (Ab) 1493
Research. Teaching versus—. N. I. WHITE (Ab) 1308
Research. The national Institute of Health: Uncle Sam's organization for medical—. E. K. FOLTZ (Ar) 31
Research bring disrespect, Does—? W. W. KEMMERER (Ab) 950
Research in the South. The development of scientific—. G. J. FERTIG (Ab) 1664
Research made by National Research Council. Grants for chemistry— (CN) 180
Research necessitates promotional advertising. Applied analytical chemical—. G. F. SMITH (Ar) 84
Research patents. The University of Wisconsin— (CN) 384
Research students in chemistry, 1931. The eighth census of graduate—. C. HULL AND C. J. WEST (Ar) 1472
Research, Chemical—: A factor of prime importance in American industry. C. M. A. STINE (Ar) 2032
Research—*See*, Dreams and realities. L. H. BAEKELAND (Ar) 1000
Researchers. Literate— (S) 91
Resins. The demonstration of artificial—. S. B. BAMBERGER (Ab) 565
Resins developed into new forms. Alkyd —. J. G. E. WRIGHT (Ab) 2001
Resistance measurements. Apparatus for electrical— (B) 1138
Review of the British chemical industry in 1931. A—. J. D. PRATT (Ab) 758
Rhenium. W. F. MEGGERS (Ab) 369
Rhenium. The element—. I. AND W. NODDACK (Ab) 161
Rheological properties. On designing materials with specific—. E. C. BINGHAM (Ab) 569
Rheology subject index. E. C. BINGHAM (Ab) 370
Rhodium—*See*, The discovery of the elements. VIII. M. E. WEEKS (Ar) ... 1022
Rhythmic phenomena in gels. J. M. JOHLIN (Ab) 1302
Rice, Dr. Oscar—, receives annual A. C. S. Langmuir award (Ab) 2144
Richards medal awarded A. A. Noyes (CN) 582
Richards. Investigations of atomic weights by Theodore William—. G. S. FORBES (Ar) 453
Richards. Theodore William— (P) 452
Richards. Theodore William—(C) N. E. GORDON 365
C. WHITING 365
G. WENDT 366, 559
H. ZEISHOLD 559
Richter. Hieronymus Theodor— (P) 1431
Ring stand and table lamp with flexible support (Ab) 367
Rise of air-conditioning with particular reference to the chemical field. W. L. FLEISHER (Ab) 368
Rocks tell how they were formed. "A classic of science" (Ab) 762
Rogers. James Blythe— (P) 711
Rogers. William B.— (P) 710
Rôle of Lavoisier in the history of the sciences. The—. A. MIELI (Ab) 2140
Rolfinck bis Knorr (1629–1921). Die Chemie in Jena von—. F. CHEMNITIUS (B) 989
Roman mining in Britain. ANON. (Ab) ... 1305
Romance and utility of the electron moment. The—. J. F. HALLER (Ab) .. 162
Roscoe. Sir Henry Enfield— (P) 881, 1421
Rose. Heinrich—(P) 869
Rose. Valentin—the Younger—(P) 466
Royal Society. Hugh S. Taylor nominated to fellowship in— (CN) 955
Royal Society Mond Laboratory. Hydrogen liquefaction plant at the—. P. KAPITZA AND J. D. COCKCROFT (Ab) .. 948
"Rubber" from a chemical laboratory. F. D. MCHUGH (Ab) 1663
Rubber. A wonder book of— (B) 1500
Rubber for tanks for steel pickling. Triflex— (S) 999
Rubber industry. Recent developments in the—. G. OENSLAGER (Ar) 974
Rubber latex. Recent scientific and technical developments. V. N. MORRIS AND H. W. GREENUP (Ab) 2137
Rubber recalls German war product. New synthetic— (CN) 185
Rubber stoppers. Inserting glass tubing into tight-fitting—. V. N. PATWARDHAN (C) 1489
Rubber, Carothers tells how new synthetic—was achieved (CN) 591
Rubber, Chlorinated—*See*, Tornesite. F. ROSENDAHL (Ab) 2134
Rubidium. The preparation of—. S. GRAVES (Ar) 1274
Rubidium—*See*, The discovery of the elements. XIII. M. E. WEEKS (Ar) ... 1418
Rumford, Count—*See*, A teacher who became a count. ANON. (Ab) 2003
Rush. Benjamin— (Ab) 164
Rush. Benjamin—(F). *See*, opp. p. 1; (P) *See also* 681
Ruthenium—*See*, The discovery of the elements. VIII. M. E WEEKS (Ar) ... 1028

Rutherford. Daniel—(P)..... 220
Rutherford of Nelson, O.M., F.R.S. Scientific worthies; the Right Honorable Lord—. M. DE BROGLIE (Ab)..... 1491

Sabatier. Paul—(with Edgar Fahs Smith) (P)..... 628
Saccharides. Chemistry of the—. H. PRINGSHEIM (B)..... 1312
Sage. Balthasar Georges—(P)..... 25
St. Andrew's University. Fire damages physical and chemical laboratories of—(CN)..... 395
Sainte-Claire Deville. Charles and Henri—(P)..... 1405
Salaries in land-grant universities and colleges (B)..... 792
Salt domes of Louisiana and Texas. R. A. STEINMAYER (Ab)..... 1836
Salt, Milling—in Texas. H. B. COOLEY (Ab)..... 1836
Salt-making on the Great Salt Lake. T. B. BRIGHTON (Ar)..... 407
Samaria—*See*, The discovery of the elements. XVI. M. E. WEEKS (Ar) 1763, 1767
Scandia—*See*, The discovery of the elements. XVI. M. E. WEEKS (Ar).. 1759
Scandium—*See*, The discovery of the elements. XV. M. E. WEEKS (Ar)... 1609
Scheele. Carl Wilhelm—(P).....231, 460
Scholarship offered by American Association of University Women (CN).... 181
Scholarships and fellowships. Grants available in United States colleges and universities (B)..... 970
Scholarships for British and American students. Charles and Julia Henry Fund—(CN)..... 782
Scholarships in United States. 50,000—(CN)..... 954
Schools and research. J. THORPE (Ab)... 1493
Schools extravagant today without visual education. E. R. ENLOW (Ab)..... 1664
Science and the meat industry. T. MORAN (Ab)..... 1129
Science in action. E. R. WEIDLEIN AND W. A. HAMOR (B)..... 191
Science in English schools (Ab)..... 2143
Science in the city of London. E. C. SMITH (Ab)..... 165
Science in the melting pot. F. H. LORING. (Ab)..... 2004
Science makes notable strides in 1931 (CN) 385
Science Masters' Association London meeting, December 29, 1931. The—. C. NORWOOD (Ab)..... 1492
Science of education. The—. M. J. DEMIASHKEVICH (Ab)..... 1492
Science of voice. The—. D. STANLEY (Ab) 574
Science Press of Germany. The—(CN).. 396
Science reading material for pupils and teachers. C. M. PRUITT (B)..... 1672
Science talks for schools available on phonograph records (CN)..... 773
Science. A college course in methods of teaching—. V. GEGENHEIMER (Ar).. 1439
Science. An English impression of American general—. F. W. TURNER (Ab). 2003
Science. Classics of—*See*, Classics of science in this index.
Science. Current—(B)..... 2150
Science. Goethe and—. A. C. CHANDLER (Ab)..... 1131
Science. Individualized work in—. R. C. TREASHER (Ab)..... 1133
Science. Introduction to the history of—. Vol. II. From Rabbi ben Ezra to Roger Bacon. G. SARTON (B)..... 1665
Science. Living in a world of—. Water and air; Energy and power; Heat and health. M. MEISTER (B)..... 397
Science. Sex differences in the study of general—. V. C. SMITH (Ab)..... 762
Science. The aims of a college course in—. A. A. BLESS (Ar)..... 889
Science. The diffusion of—. Symposium (Ab)..... 2004
Science. The frontiers of—. M. TRUMPER (Ar)..... 1373
Science. The future man of—. G. W. STEWART (Ab)..... 166
Science. The thirty-first yearbook of the National Society for the Study of Education. Part I. A program for teaching—. S. R. POWERS (B)..... 962
Science and technology. Some problems relating to history of—. G. BUGGE (Ar)..... 1567
Science building at Hendrix College. A new—. F. REVES (CN)..... 374
Science classes. Instruction plan material for—. Chemistry. M. MEISTER (Ab) 2142
Science education in Sweden and the United States. A comparative study of—. H. F. KILANDER (Ab)..... 2143
Science hall at Fairmont State Teachers College. New—. H. F. ROGERS (CN) 952
Science in secondary schools. The teaching of—. F. D. CURTIS (Ab)..... 1306
Science in the University of London. The teaching of the history of—. A. WOLF (Ab)..... 372
Science instruction in junior high. Individualized—. J. P. MCMURRAY (Ab) 1306
Science really is. What—. A. H. COMPTON (Ab)..... 573
Science teachers of New Jersey. Range of subjects taught, teaching load, and preparation in science of the—. R. D. REED (Ar)..... 326
Science, The child and—: symposium (Ab) 372
Science. The Muslim Association for the Advancement of—(CN)..... 180
Science, U. S. continues support of international—despite depression (CN)... 774
Science, What is—? D. E. PHILLIPS (Ab) 1308
Sciences. The Faculty of—(CN)..... 958
Sciences. The natural—. R. A. MILLIKAN (Ab)..... 2004
Sciences. The social—. H. G. MOULTON (Ab)..... 2004
Science-teaching—*See*, The thirty-first yearbook of the National Society for the Study of Education. Part I. A program for teaching science. S. R. POWERS (B)..... 962
Scientific centenaries in 1932. ANON. (Ab) 762
Scientific crime detection laboratory. The—. L. J. KAEMPFER (Ab)..... 757
Scientific recognitions and awards during 1931 (CN)..... 584
Scientific worthies; the Right Honorable Lord Rutherford of Nelson, O.M., F.R.S. M. DE BROGLIE (Ab)..... 1491
Scientists are forceful, skeptical, fair minded (S)..... 784
Scientists of world coöperate in attack on heart of matter (CN)..... 774
Second law theory. Presentation of—. II. A proof of the second law for systems composed of perfect gases. T. H. HAZLEHURST, JR. (Ar)..... 1087
Secondary education. Biennial survey of education in the United States, 1928–30. Chap. III—(B)..... 606
Secondary education, XIVth annual congress of—, London, July, 1932 (CN).. 956
Secondary schools. The teaching of science in—. F. D. CURTIS (Ab).... 1306
Secondary schools of New South Wales, with special reference to the conditions existing in the United States of America. The teaching of chemistry in the—. R. W. STANHOPE (B)..... 1314
Secondary-school level carried on in California cities during 1930–31. Research projects of the—. F. C. TOUTON (Ab)..... 371
Second-year college chemistry. Another experiment in—. W. R. CARMODY (Ar)..... 1244

Secretary's report—Division of Chemical Education, A. C. S.
Denver meeting 2100
New Orleans meeting 1477
Sees beginning of new epoch in conquest of disease (S) 141
Sefström. Nils Gabriel—(P) 874, 1615
Segel's, Dr.—appointment as specialist in educational tests and measurements announced (CN) 181
Selected bibliography on aluminum from the JOURNAL OF CHEMICAL EDUCATION (S) 1273
Selecting the materials for the Timken locomotive. T. V. BUCKWALTER (Ab) 1491
Selenium—*See*, The discovery of the elements. VI. M. E. WEEKS (Ar) 477
Sensitive direct-reading mercury manometer. A—. H. W. MELVILLE, JR. (Ab) 565
Sensitometry. Practical—. H. BAINES (Ab) 1128
Service institution. The state university: a—. J. M. SMITH (Ab) 1307
Service of man. Chemistry in the —. A. FINDLAY (B) 1135
Sex differences in the study of general science. V. C. SMITH (Ab) 762
Sex differences in oxygen need of tissues. Finds—(S) 575
Shade of Socrates. The—(E) 793
Shepherd. Charles U.—(P) 699
Short course in qualitative analysis. A—. F. E. BROWN (B) 1666
Should the teacher be a recruiter for chemistry? (E) 403
Should scientific discoveries be patented? E. L. SEVRINGHAUS (Ab) 2144
Sidelights on the life of Dr. Edgar Fahs Smith. H. HALE (Ar) 620
Sigma Xi. Princeton University obtains chapter of—(CN) 961
Significance of pyrolysis temperatures. The—. J. F. NORRIS (Ar) 1890
Significant actions and criteria of achievement. ANON. (Ab) 574
Silicate of soda as a detergent. The value of—. J. D. CARTER (Ab) 759
Silicates and steel treatment. ANON. (Ab) 759
Silicates and whiteness. ANON. (Ab) 946
Silicates in cleansing. ANON. (Ab) 369
Silicates at work. ANON. (Ab) 568
Silicates in paper manufacture. ANON. (Ab) 1302
Silicon, the element of a thousand uses. A. VIEHOEVER (Ab) 946
Silicon—*See*, The discovery of the elements. XII. M. E. WEEKS (Ar) ... 1395
Silk. Chemical constitution of wool and—. C. E. MULLIN AND H. L. HUNTER (Ab) 570
Silk. Giant molecules and synthetic—. CAROTHERS AND HILL (Ab) 570
Silliman. Benjamin, Jr.—(P) 715
Silliman. Benjamin, Sr.—(P) ..688, 697, 700
Silver filter purifies water (CN) 779
Silver starts new rush in west. Demand for—. H. H. DUNN (Ab) 1303
Silver—*See*, The discovery of the elements. I. M. E. WEEKS (Ar) 6
Silver-bismuth alloys in quantitative analysis. G. W. BATCHELDER AND L. C. HURD (Ar) 929
Simple and convenient set-up for potentiometric titrations. A—. N. ALLEN (Ar) 1973
Simple apparatus for distillation of mercury. A—. M. KLEIBER (Ab) 1127
Simple aspirator trap. A—. E. F. DEGERING (Ar) 1656
Simple device for holding ultra-filtration membranes. A—. C. BREEDIS (Ab) 755
Simple electric furnace. A—. J. KISSEL AND N. KRAMER (Ar) 147
Simple method for calculating the proportions of various substances of known composition to give a mixture of definite composition. A—. H. V. HOUSEMAN (C) 941
Simple pressure regulator for vacuum distillations. A—. R. H. MUNCH (Ar) 1275
Simple quantitative method of determining ozone in ozonized air. A—. P. KRAIS AND H. MERKERT (Ab) 1302
Simple set-up for making water gas, generator gas, and carbon monoxide. A—. W. FLÖRKE (Ab) 1833
Siphon. An automatic valve for a—. C. W. TOTTEN (Ar) 1831
Sixtieth birthday of N. Caro. The—(Ab) 164
Sixtieth birthday of Richard Willstätter. The—. W. SCHLENK (Ab) 2002
Size and shape of molecules. The—. E. MACK, JR. (Ab) 162
Slide making in the classroom. M. PETTIT (Ab) 367
Slide-making. The use of color in—. G. E. ESTES (Ab) 1490
Sloane. Sir Hans—(P) 865
Small battery charger supplies current for nickel plating. R. H. ROGERS (Ab).. 2133
Small contribution to the history of crystallization. A—. E. O. VON LIPPMANN (Ab) 166
Small fractionating columns as standard equipment for the student organic laboratory. E. C. WAGNER (Ar) 320
Small laboratory for chemical microscopy. A—. R. D. COOL (Ar) 2084
Smith. Alexander—(P) 246, 254, 748
Smith. Alexander—as an educator. J. KENDALL (Ar) 254
Smith. Alexander—, the investigator. R. H. MCKEE (Ar) 254
Smith. Edgar Fahs—(F). *See*, opp. p. 607; (P) *See also*, 612, 613, 615, 616, 617, 619, 620, 622, 623, 624, 625, 626, 628, 631 645
Smith. Edgar Fahs—(E) 405
Smith. Edgar Fahs—. W. T. TAGGART (Ar) 613
Smith. Edgar Fahs—Memorial number—*See*, entire April issue.
Smith. A tribute to Edgar Fahs—(E)... 607
Smith. Biographical accounts on Edgar Fahs—, appearing since 1928 (Ar)... 665
Smith. Pennsylvania High School named for Edgar Fahs—(CN) 764
Smith. Publications of Edgar Fahs—(Ar) 655
Smith. Sidelights on the life of Dr. Edgar Fahs—. H. HALE (Ar) 620
Smith Memorial Collection, The Edgar Fahs—, University of Pennsylvania. E. ARMSTRONG (Ar) 652
Smith memorial number. *See*, entire April issue; *See also* (S) 819
Smith. J. Lawrence—(P) 719, 1759
Smith. Mrs. Edgar Fahs—(P) 666
Smith. Nathan—(P) 690
Smith. William—(P) 1578
Smits. Personal reminiscences of Dr.—. F. E. S. SCHEFFER (Ab) 165
Smits, Prof. Dr. Andreas—. J. M. BIJVOET (Ab) 165
Smoke, flash, and fire points of certain fixed oils. W. H. DICKHART (Ab)... 1303
Smoking found to dull the sense of taste (CN) 186
Snake venom. Potassium permanganate as an antidote for—. A. M. REESE (Ab) 2135
Soup may taste different to different individuals (CN) 592
Soap flotation of the non-sulfides. W. H. COGHILL AND J. B. CLEMMER (Ab)... 1130
Soaps as water softeners, Comparative cost of—: a freshman experiment in chemistry. O. E. LOWMAN (Ar) 1809
Social sciences. The—. H. G. MOULTON (Ab) 2004
Society of Chemical Industry. Presidents and medalists of the—. ANON. (Ab) 370

Socrates. The shade of—(E)..... 793
Sodium, and potassium. The isotopes of lithium,—. K. T. BAINBRIDGE (Ab). 1130
Sodium—*See*, The discovery of the elements. IX. M. E. WEEKS (Ar)... 1035
Solar radiation. C. G. ABBOT (Ar)..... 416
Solid carbon dioxide in laboratory technic. D. H. KILLEFFER (Ab)..... 755
Solubility problem of colloids. E. S. HEDGES (Ab)..... 2134
Solutions of metals in non-metallic solvents: some of their physical and chemical properties. C. A. KRAUS (Ab)..... 1130
Solutions of two volatile, consolute liquids. Vapor pressure-vapor composition curves of ideal—. H. S. VAN KLOOSTER (Ar)..... 1455
Solvay-soda process in the classroom. The demonstration of the—. H. RHEINBOLDT AND L. BEUMELBURG (Ab)..... 1832
Solvents industry, The aliphatic—, 1931. ANON. (Ab)..... 758
Some applications of the electronic theory of chemistry. R. F. HUNTER (Ab).. 570
Some applications of the electronic theory to valency. R. F. HUNTER (Ab).... 1130
Some aspects of catalysis. J. ALEXANDER (Ar)..... 2026
Some aspects of stereochemistry. W. H. MILLS (Ab)..... 2144
Some chemical aspects of cancer research. E. MCDONALD (Ar)..... 820
Some elementary laboratory precautions against fire (S)..... 1522
Some elements yielded by yttrium. "A classic of science" (Ab)..... 370
Some experiments with crystals. C. H. STONE (Ar)..... 1107
Some modern developments of organic chemistry. D. E. WORRALL (Ab)... 1128
Some of the fallacies of colloid chemistry. T. L. KELLY (Ab)..... 572
Some problems relating to history of science and technology. G. BUGGE (Ar)..... 1567
Some recent advances in biological chemistry. R. A. DUTCHER (Ar)..... 1365
Some recent developments in American glass manufacture. A. SILVERMAN (Ab)..... 569
Something new: aluminum jewelry. C. M. HOKE (Ab)..... 2135
Sources of project material. H. W. HANSEN (Ar)..... 1078
South. The development of scientific research in the—. G. J. FERTIG (Ab).. 1664
Southwest still a proving ground for petroleum technology. S. D. KIRKPATRICK (Ab)..... 1836
Spaulding. Lyman—(P)..... 690
Spectral tests. An atomizer for—. J. MILBAUER (Ab)..... 161
Spectroscope. Practical analysis with the—. C. C. NITCHIE (Ab)..... 368
Spectroscopy with special reference to the "ratio quantitative system." Quantitative—. S. J. LEWIS (Ab)..... 1999
Spectroscopy—*See*, The discovery of the elements. XIII. M. E. WEEKS (Ar) 1413
Spectrum. Heat of the—. "A classic of science" (Ab)..... 761
Spectrum analysis with Hilger instruments, including a note on the various types of emission spectra. The practice of—. F. TWYMAN (B)..... 791
Speed limit in new experiments. Molecules observe—(CN)..... 392
Speeding electrons make large molecules form (S)..... 606
Spheres. The packing of—. L. PAULING (Ab)..... 1128
Spinoza, and transmutation. Helvetius,—. M. NIERENSTEIN (Ab)... 1664
Spontaneous combustion in the marshes of southern Louisiana. P. VIOSCA, JR. (Ab)..... 1303
Spot plates. Improvised—. L. P. MITCHELL (C)..... 364
Spraying. The evaluation of sulfur suspensions used in—. R. M. WOODMAN (Ab)..... 2001
Spring meeting of the A. C. S. (E)..... 404
Springer, Dr.—honored by Heidelberg on golden anniversary (CN)..... 190
Stahl. Georg Ernst—(P)..... 215
Standards at the college level. Classsize—. E. HUDELSON (Ab)..... 1307
Starch. The microscopy of—. H. ELLIS (Ab)..... 567
Stars. The chemistry of the—. W. K. GREEN (Ab)..... 163
State university, The—a service institution. J. M. SMITH (Ab)..... 1307
Statistical data concerning German chemists, 1925 (Ab)..... 166
Statistical data 1930 for chemical instruction. F. HOFMANN (Ab)..... 1306
Statistics of private high schools and academies 1929–30 (B)..... 970
Statistics of teachers' colleges and normal schools 1929–30..... 970
Status of chromium plating. The—. W. BLUM (Ab)..... 1130
Status of the junior-college instructor (B) 200
Steam. Endurance of steel reduced by—(S)..... 113
Steel treatment. Silicates and—. ANON. (Ab)..... 759
Steel welds. Radium finds application in inspecting—(S)..... 98
Steel reduced by steam. Endurance of—(S)..... 113
Steels in the chemical industry. High chromium—. F. M. BECKET (Ab)... 947
Stereochemistry. Forty years of—. W. J. POPE (Ab)..... 2141
Stereochemistry. Some aspects of—. W. H. MILLS (Ab)..... 2144
Stock. Alfred E.—(P)..... 586, 1935
Stock, Professor—is visiting Cornell on Baker lectureship (CN)..... 586
Stone age men made tools of crystal (S)... 348
Stopper puller. A glass—. F. R. PRATT (Ab)..... 2132
Stopper substitute for the Victor Meyer outer jacket. A—. J. H. ROBERTSON (Ar)..... 925
Stoppers. An extractor for "frozen" bottle—. S. L. REDMAN (C)..... 940
Stoppers. Two simple methods for extracting frozen—. C. A. SLOAT AND A. E. DIEHL (Ar)..... 1267
Stoppers from acid bottles. An apparatus for removing glass—. E. R. ROSE (Ar)..... 149
Story of alcohol. The—. C. C. PINES (Ab)..... 567
Story of common things. The—. L. EHRENFELD (B)..... 1497
Stromeyer. Friedrich—(P)..... 1053
Strontium. Color detection of calcium in the presence of—. F. L. HAHN (Ab) 1661
Strontium in the presence of calcium. The detection of—. A. W. AVENS AND M. J. MURRAY (Ar)..... 522
Strontium—*See*, The discovery of the elements. X. M. E. WEEKS (Ar).... 1050
Structure of the atomic nuclei. The—. E. RUTHERFORD (Ab)..... 2135
Structure. Recent applications of X-rays in investigations of molecular—. W. C. PIERCE (Ar)..... 845
Strutt. Robert John—(Lord Rayleigh) (P) 2066
Student accuracy in the physical-chemical laboratory. E. C. GILBERT AND G. C. WARE (Ar)..... 103
Students in chemistry, 1931. The eighth census of graduate research—. C. HULL AND C. J. WEST (Ar)..... 1472

Studies in the mineral and chemical resources of the Mojave Desert. P. L. TURRILL (Ar) I. 1318
II. 1530
III. The inspection trip. 2040
Studies on Jabir ibn Hayyan. P. KRAUS (Ab) 760
Study of chemistry. An elementary—. W. MCPHERSON AND W. E. HENDERSON (B) 2145
Study of the achievements of students of general chemistry in college. A—. W. J. BRAY (Ab) 2142
Study suggests new line of cancer research (CN) 183
Stunts for the home chemists. Industrial—. R. B. WAILES (Ab) 1660
Syracuse University. Vocational lectures for high-school students at—(CN) 781
Sublimation. G. R. ROBERTSON (Ar) 1713
Suction and dropping device. Automatic —. E. LÖWENSTEIN (Ab) 2131
Sugar. Unrefined—. H. C. S. DE WHALLEY (Ab) 2134
Sugars and other organic substances. A convenient method for the crystallization of—. H. TAUBER AND I. S. KLEINER (Ar) 1970
Suitable projects in plant chemistry. H. F. SCHAEFFER (Ar) 1103
Sulfur crystals. Preparation of rhombic—. C. H. STONE (C) 941
Sulfur for your home laboratory. Experiments with—. R. B. WAILES (Ab) 1999
Sulfur industry. New gasoline process endangers—(CN) 521
Sulfur mining. Looking forward in—. J. H. POLLARD (Ab) 1837
Sulfur, Copper ores cleared of—by water (CN) 588
Sulfur, Mining—for world consumption. EDIT. STAFF (Ab) 1837
Sulfur—*See*, The discovery of the elements. I. M. E. WEEKS (Ar) 9
Sulfur suspensions used in spraying. The evaluation of—. R. M. WOODMAN (Ab) 2001
Sulfuric acid. The manufacture of—. S. I. LEVY (Ab) 1491
Sulfuric acid plants. Corrosion looms large in—. J. J. HEALY, JR. 2137
Summer courses at Pittsburgh (CN) 961
Summer courses in chemical microscopy at Cornell University (CN) 961
Summer session of Hopkins chemistry department. Notable American chemists will contribute to—(CN) 380
Summer session. Can the—extend its service beyond the teacher? (E) 201
Sun an atom builder, The— a new theory. H. N. RUSSELL (Ab) 373
Sundström. Anna—(P) 1919
Sunlight upon man. The effect of—. J. H. POTTS (Ab) 373
Sunshine vitamin made in laboratory (CN) 589
Surface activity equation. A laboratory experiment based on the Freundlich—. G. W. BENNETT (Ar) 517
Surfaces. The catalytic action of—. J. E. NYROP (Ab) 163
Survey of the chemistry of free radicals. A—. M. GOMBERG (Ar) 439
Survey, Annual—of American chemistry, Vol. VI, 1931. C. J. WEST, *editor* (B) 1842
Survey, Biennial—of education in the United States, 1928–30 (B). Vol. 1. Chap. III. Secondary education 606
Vol. 1. Chap. IV. Industrial education 792
Vol. 2. Chap. III. Statistics of city school systems 2010
Sweden and the United States. A comparative study of science education in—. H. F. KILANDER (Ab) 2143
Symposium on "The history of chemical education in America" 667–750
Syntheses. Organic—(Collective Vol. I). H. GILMAN (B) 1499
Syntheses. Organic—. Vol. XII. F. C. WHITMORE, *editor-in-chief* (B) 1670
Synthesis of hydrogen chloride in a gas reaction double sphere. The—. P. RISCHBIETH (Ab) 156
Synthetic organic chemistry. A new era in—. E. E. REID (Ar) 1561
Syracuse meeting of the American Association for the Advancement of Science and associated societies. The—. C. F. ROOS (Ab) 2004
System for eliminating bookkeeping in lending articles from the laboratory storeroom. A—. C. W. TOTTEN (Ar) 1252
System of qualitative microanalysis. A—. C. J. ENGELDER AND W. SCHILLER (Ar) 1636
Systematic qualitative analysis with the help of many new reactions. C. J. VAN NIEUWENBURG (Ab) 1128

Talbot. William Henry Fox—(P) 1415
Tantalum—*See*, The discovery of the elements. VII. M. E. WEEKS (Ar) 867
T'ao Hung-Ching. T. L. DAVIS AND LU-CH'IANG WU (Ar) 859
Taste in water (S) 343
Taste. Smoking found to dull the sense of— (CN) 186
Taste, Inability to—bitter chemical is hereditary (S) 245
Taylor, Hugh S.—nominated to fellowship in Royal Society (CN) 955
Teacher demand and supply (B) 402
Teacher participation in community affairs. E. S. HOLBECK (Ab) 573
Teacher training primarily a state function. J. A. WILLIAMS (Ab) 1838
Teacher who became a count. A—. ANON. (Ab) 2003
Teacher. The pupil checks the—. A. E. F. SCHAFFLE (Ab) 573
Teacher. The pupil looks at the—. C. C. GUILFORD (Ab) 1838
Teacher and service courses in the land-grant college. The chemistry—. R. E. KIRK (Ar) 538
Teacher, Can the summer session extend its service beyond the—? (E) 201
Teacher be a recruiter for chemistry, Should the—? (E) 403
Teachers. Administrative practices affecting classroom—(Ab) 1308
Teachers. Research for—(E) 1140
Teachers for character education. Training—. H. NEUMANN (Ab) 1308
Teachers of New Jersey. Range of subjects taught, teaching load, and preparation in science of the science—. R. D. REED (Ar) 326
Teachers—*See*, Indices of the qualities of a faculty. H. L. HUMKE (Ab) 371
Teachers' colleges. The administration of chemistry in state—. T. C. HERNDON (Ar) 1448
Teachers' colleges and normal schools, Statistics of—1929–30 (B) 970
Teachers' service bureau. A chemistry—. J. O. FRANK AND T. O. JONES (Ar) 1255
Teacher-training. Trends in—. F. W. SMITH (Ab) 1838
Teaching of chemistry in the high school. The—. J. H. CARD (Ab) 1132
Teaching of chemistry in the secondary schools of New South Wales, with special reference to the conditions existing in the United States of America. The—. R. W. STANHOPE (B) 1314
Teaching of science in secondary schools. The—. F. D. CURTIS (Ab) 1360
Teaching of the history of science in the University of London. The—. A. WOLF (Ab) 372

Teaching of the theory of the dissociation of electrolytes. The—. M. KILPATRICK, JR. (Ar). I. The application of the law of mass action to solutions of electrolytes 840
III. The colorimetric method. 1226
Teaching of the theory of the dissociation of electrolytes. The—. II. The definition of pH. M. KILPATRICK, JR. AND M. L. KILPATRICK (Ar) 1010
Teaching load for chemistry teachers. Report of the committee on the— (Ar) .. 2111
Teaching of high-school chemistry. The —. J. O. FRANK (B) 2146
Teaching the more intelligent pupil. C. W. BOSE (Ab) 1133
Teaching versus research. N. I. WHITE (Ab) 1308
Teaching. College and university—. H. L. DODGE (Ab) 949
Teaching. College and university—. ANON. (Ab) 1493
Teaching. The advancement of—. W. B. MUNRO (Ab) 950
Teaching by the American Association of University Professors. Investigation of college—(CN) 384
Teaching chemistry. Methods of—. E. B. AMMIDOWN (Ab) 1133
Teaching fundamentals of chemical equilibrium. Usable analogies in—. W. E. CALDWELL (Ar) 2079
Teaching general science by a contract plan. The use of visual aids in—. D. F. OSBURN (Ab) 367
Teaching of chemistry. Atomic and molecular structure models as a visual aid in the—. A. L. POULEUR (Ar) .. 301
Teaching of chemistry in the University of Pennsylvania, the Central High School of Philadelphia, and the Franklin Institute of Pennsylvania. Notes on the early—. J. S. HEPBURN (Ar) 1576
Teaching of chemistry since 1914. Advances in the—. F. B. DAINS (Ar) ... 745
Teaching of general chemistry. Modern conceptions and the—. E. A. WILDMAN (Ar) 92
Teaching profession. Problems affecting the publishing business and the—. W. P. JOHNSON (Ab) 371
Teaching science. A college course in methods of—. V. GEGENHEIMER (Ar) 1439
Teaching science. The thirty-first yearbook of the National Society for the Study of Education. Part I. A program for—. S. R. POWERS (B) 962
Technology. Bibliography of bibliographies on chemistry and chemical—. Second supplement, 1929–31. C. J. WEST AND D. D. BEROLZHEIMER (B) 970
Technology. Some problems relating to history of science and—. G. BUGGE (Ar) 1567
Teeth. Fluorine proved cause of mottled—(S) 858
Teeth, Food more important for good— than brushing (S) 600
Tells new theory of frostbite protection (CN) 184
Tellurium—*See*, The discovery of the elements. VI. M. E. WEEKS (Ar) ... 474
Temperature comparison chart. T. C. PATTON (Ar) 1110
Temperature. Device for the simultaneous observation of melting-point and—. E. W. BLANK (Ar) 1975
Temperature. Exploring the extremes of—. D. L. WATSON (Ab) 372
Temperatures. The significance of pyrolysis—. J. F. NORRIS (Ar) 1890
Terbia—*See*, The discovery of the elements. XVI. M. E. WEEKS (Ar) .. 1758
Test in the mechanics and related fundamentals of high-school chemistry. Construction of a diagnostic—. J. E. MALIN (B) 1136
Test, Persing laboratory chemistry—. Forms A and B. K. M. PERSING (B) 1314
Testing the reaction of distilled water. E. TRUG (Ab) 756
Testing program of the coöperative test service. The proposed 1932 college—. J. B. JOHNSON (Ab) 572
Tests for new element 87 confirmed by Georgia scientists (CN) 592
Tests in chemistry. C. E. DULL (B) 397
Tests. An experiment with true-false—. J. R. BIETZ (Ab) 762
Tests and measurements announced. Dr. Segel's appointment as specialist in educational—(CN) 181
Tests in chemistry. The twentieth century practice-exercises and objective—. G. M. BRADBURY AND M. V. MCGILL (B) 194
Tests. Intelligence—*See*, Away with fancy frills and fads. R. R. TURNER (Ab) .. 371
Textbooks reviewed in JOURNAL OF CHEMICAL EDUCATION, Vol. IX—*See*, titles in italics in the Author Index, thisissue.
Textile Foundation, Inc. The—. W. E. EMLEY (Ar) 1886
Textile microscopy. H. ELLIS (Ab) 567
Textile testing laboratory has demonstrable value. H. H. WILLIS (Ab) ... 570
Textile industries during the industrial revolution. The importance of chemical developments in the—. J. H. PARK AND E. GLOUBERMAN (Ar) 1142
Textile industry. Improved methods of water purification aid—. D. R. WEEDON (Ab) 569
Textile Research. U. S. Institute for—. W. E. EMLEY (Ar) 1882
Textile wastes. Modern practice in disposal and recovery of—. W. E. HADLEY (Ab) 569
Thalén. Tobias Robert—(P) 1613
Thallium—*See*, The discovery of the elements. XIII. M. E. WEEKS (Ar) .. 1425
Thenard. Louis Jacques—(P) 1390
Theoretical chemistry. Outlines of—. F. H. GETMAN AND F. DANIELS (B) .. 602
Theses in education. Recent—(B) 970
Thin films in relation to corrosion problems. U. R. EVANS (Ab) 164
Third competitor to enter race for missing element 87 (CN) 188
Thirty-first yearbook of the National Society for the Study of Education, The —. Part I. A program for teaching science. S. R. POWERS (B) 962
Thompson. Benjamin—*See*, A teacher who became a count. ANON. (Ab) ... 2003
Thomson. Thomas—(P) 871
Thorium—*See*, The discovery of the elements. XI. M. E. WEEKS (Ar) ... 1240
Thorpe. Sir Edward (T.E.)—(P) 878
Three common elements in group IV. "A classic of science" (Ab) 2140
Thulia—*See*, The discovery of the elements. XVI. M. E. WEEKS (Ar) .. 1761
Tierischer stoffe. Chemie und chemische technologie—: ein Einfuhrung in die angewandte Zoöchemie. G. GRASSER (B) 199
Timber. The conservation of structural—. M. E. SMITH (Ab) 759
Time-measuring. Metallurgy's contribution to accuracy in—. G. E. SHUBROOKS (Ar) 1358
Timken locomotive. Selecting the materials for the—. T. V. BUCKWALTER (Ab) 1491
Tin subgroup. An ionic explanation of the separation of the cations of the— with the reagent sodium hydroxide. W. D. WARREN (C) 1486

Tin—*See*, The discovery of the elements. I. M. E. WEEKS (Ar) 8
Tin-bearing wastes. Recovery of—. V. FROELICHER (Ab) 569
Tincture of ferric chloride. A. OSOL (Ab) 568
Tiny balls of cellulose seen as units of structure (S) 319
Titanium—*See*, The discovery of the elements. XI. M. E. WEEKS (Ar) 1233
Titles for a chemical label book. COM. REP. (Ar) 344
Titrations. A simple and convenient set-up for potentiometric—. N. ALLEN (Ar) 1973
Titrations. Potentiometric—. I. M. KOLTHOFF AND N. H. FURMAN (B) ... 398
Titrations which can be prepared in one minute. Neutral standard for hydrogen-ion work and accurate—. R. J. WILLIAMS AND C. M. TYMAN (Ab) 1662
Titres. In defense of—. W. P. CORTELYOU (C) 1297
Too many chemists? (Ab) 371, 574
Tools of crystal. Stone age men made— (S) 348
Tooth decay prevented for first time in history (CN) 587
Tornesite (Chlorinated rubber). F. ROSENDAHL (Ab) 2134
Torrey. John—(P) 709
Training teachers for character education. H. NEUMANN (Ab) 1308
Transmutation. Helvetius, Spinoza, and—. M. NIERENSTEIN (Ab) 1664
Transparent wraps (Ab) 2135
Trap. A simple aspirator—. E. F. DEGERING (Ar) 1656
Trapping offensive gases. A device for—. G. C. WARE (Ar) 1475
Travers. Morris William (P) 2075
Treatment of hydrogen-ion concentrations for instructional purposes in high schools. The—. H. BARNSTORF (Ab) 565
Trends in teacher-training. F. W. SMITH (Ab) 1838
Tribute to Edgar Fahs Smith. A—(E) ... 607
Triflex rubber for tanks for steel pickling (S) 999
Truck. An adjustable apparatus stand and—. R. W. SHAW (Ab) 2133
Tuition and cost of education. G. A. BRAKELEY (Ab) 368
Tungsten—*See*, The discovery of the elements. V. M. E. WEEKS (Ar) 459
Tutorial plan at Buffalo. The—. H. W. POST (Ab) 2142
Twelfth annual Ohio State Educational Conference to meet in Columbus in April (CN) 596
Twentieth century practice-exercises and objective tests in chemistry. The—. G. M. BRADBURY AND M. V. MCGILL (B) 194
Two graduate assistantships available for 1932–33 at Boston University College of Liberal Arts (CN) 783
Two simple methods for extracting frozen stoppers. C. A. SLOAT AND A. E. DIEHL (Ar) 1267
Types, uses, and testing of refractory cements. W. R. KERR (Ab) 1663

Ulloa. Don Antonio de—(P) 1017
Ultra-filtration membranes. A simple device for holding—. C. BREEDIS (Ab) 755
Ultra-violet light changes carrot pigments into vitamin A. V. COFMAN (Ab) ... 1835
Ultra-violet light. New process of photography by—(S) 300
Undergraduate. Research for the—. R. E. KIRK (Ar) 280
Undergraduate curriculum of the course in chemistry. Research in the—. G. B. L. SMITH (Ar) 285
Understand chemistry. How to—. A. F. COLLINS (B) 1496
Unemployed chemist. The—(E) 1316
Unemployment. Education and—. R. A. MILLIKAN (Ab) 574
Unifying lecture, quiz, and laboratory sections in general chemistry. G. G. TOWN (Ar) 1065
Unit processes and principles of chemical engineering. J. C. OLSEN (B) 1840
U. S. civil-service examination for assistant assayer (S) 1972
U. S. continues support of international science despite depression (CN) 774
U. S. delegates to International Union of Chemistry (CN) 382
U. S. Institute for Textile Research. W. E. EMLEY (Ar) 1882
U. S. X-ray standard lessens danger of burns (CN) 181
Units in physics. Report on the experimental use of—. A. W. HURD (Ab) .. 1306
Universe is exploding, Eddington tells scientists (S) 279
University of Arkansas. Alpha Chi Sigma award at the—(CN) 956
University of Freiburg. New physical chemistry laboratory at—(CN) 395
University of Kansas. The E. H. S. Bailey prize in analytical chemistry at The—(CN) 956
University of London. Ramsay Memorial Laboratory of Chemical Engineering—(CN) 394
University of London. The teaching of the history of science in the—. A. WOLF (Ab) 372
University of Pennsylvania, the Central High School of Philadelphia, and the Franklin Institute of Pennsylvania. Notes on the early teaching of chemistry in the—. J. S. HEPBURN (Ar) .. 1576
University of Pittsburgh student. A. C. S. membership awarded to Herrmann— (CN) 396
University of Texas. The new chemical laboratory at the—. W. A. FELSING (CN) 169
University of Washington. Oceanography at the—(CN) 577
University of Wisconsin research patents. The—(CN) 384
Unknowns. A new code system for dispensing qualitative analysis—. A. L. TAYLOR (Ar) 1811
Unknowns in teaching organic chemistry. The use of—. L. OYSTER (Ar) 910
Uranium, No chemical elements heavier than—, scientist concludes (CN) 951
Uranium—*See*, The discovery of the elements. V. M. E. WEEKS (Ar) 464
Urbain. Georges—(P) 1769
Unrefined sugar. H. C. S. DE WHALLEY (Ab) 2134
Usable analogies in teaching fundamentals of chemical equilibrium. W. E. CALDWELL (Ar) 2079
Use of color in slide-making. The—. G. E. ESTES (Ab) 1490
Use of motion pictures in public schools (CN) 595
Use of the hydrogen-ion comparator in the titration of aqueous extracts. H. J. ALMQUIST (Ar) 926
Use of unknowns in teaching organic chemistry. The—. L. OYSTER (Ar) 910
Use of visual aids in teaching general science by a contract plan. The—. D. F. OSBORN (Ab) 367
Useless chemical knowledge. W. M. DEHN (Ar) 1075
Uses for the rarer metals (S) 458

Vacuum apparatus. Automatic control for—. C. I. SWAYZE (Ab) 2132
Vacuum distillations. A simple pressure regulator for—. R. H. MUNCH (Ar) 1275

Vacuum technic for the chemist. K. HICKMAN (Ab) ... 1127
Valency. Some applications of the electron theory to—. R. F. HUNTER (Ab) ... 1130
Value of silicate of soda as a detergent. The—. J. D. CARTER (Ab) ... 759
Valve for a siphon. An automatic—. C. W. TOTTEN (Ar) ... 1831
Vanadium—*See*, The discovery of the elements. VII. M. E. WEEKS (Ar) ... 873
Vapor pressure-vapor composition curves of ideal solutions of two volatile, consolute liquids. H. S. VAN KLOOSTER (Ar) ... 1455
Vapor-density methods. Micro-molecular-weight determination by—. E. W. BLANK AND M. L. WILLARD (Ar) ... 1819
Vast raw material resources await chemical development. W. M. WEIGEL (Ab) ... 1836
Vauquelin. Louis Nicolas—(P) ... 469
Victor Meyer apparatus. An improvised—. I. STONE (Ab) ... 755
Victor Meyer method. An improvement in the—. A. R. RONZIO AND K. A. GAGOS (Ar) ... 1827
Victor Meyer outer jacket. A stopper substitute for the—. J. H. ROBERTSON (Ar) ... 925
Victor Meyer vaporization chamber. An improved method of introducing the sample into a—. A. DIETZ (Ar) ... 2096
Vinci. Leonardo da—(P) ... 222
Viscose and cuprammonium rayon. Distinction between—. J. BRENNAN (Ab) ... 570
Vision among chemists. Need of a broader—. J. READ (Ab) ... 372
Visual aid in the teaching of chemistry. Atomic and molecular structure models as a—. A. L. POULBUR (Ar) ... 301
Visual aids in chemical education. The museum. A. M. DOYLE (Ar) ... 1791
Visual aids in teaching general science by a contract plan. The use of—. D. F. OSBURN (Ab) ... 367
Visual aids in various forms. An integrated project on copper, utilizing—. L. A. ASTELL (Ab) ... 762
Visual education. Schools extravagant today without—. E. R. ENLOW (Ab) 1664
Visual education in elementary college chemistry. An experiment in—. B. S. HOPKINS AND H. G. DAWSON (Ab) ... 1837, 2142
Vitamin A obtained in pure form by Drummond (CN) ... 593
Vitamin A. Ultra-violet light changes carrot pigments into—. V. COFMAN (Ab) ... 1835
Vitamin A from carotene. Liver enzyme makes—(S) ... 556
Vitamin advertising may mislead public, says chemist (S) ... 167
Vitamin B needed. Find way to measure amount of—(S) ... 102
Vitamin B, Isolation of—followed new line of research (CN) ... 777
Vitamin C derived from poison found in opium (CN) ... 778
Vitamin chart. W. WESTON (Ab) ... 946
Vitamin D. Milk enriched with—. J. A. TOBEY (Ab) ... 1302
Vitamin D, British report most potent form of—yet known (S) ... 852
Vitamin made in laboratory. Sunshine—(CN) ... 589
Vitamins and flavor. D. M. TORRANCE (C) ... 151
Vocation. Chemistry as a—. A bit of vocational guidance for inquiring high-school pupils. F. B. WADE (Ar) 1058
Your start toward an industrial job in chemistry. H. W. RHODEHAMEL (Ar) 1062
Vocational guidance in chemistry. M. V. MCGILL (Ar) ... 885
Vocational lectures for high-school students at Syracuse University (CN) ... 781
Vocational Association program. Chemical education has part in American—(CN) ... 190
Voice. The science of—. D. STANLEY (Ab) ... 574
Volume relationship in the synthesis of water vapor. Apparatus for the determination of the—. H. PETZOLD AND R. SCHARF (Ab) ... 1997
Volumetric analysis. G. FOWLES (B) ... 1499
Volumetric analysis. New indicators for—. W. H. BARRETT (Ab) ... 1490
Von Hofmann. August Wilhelm—(P) ... 1426
Von Humboldt. A forgotten article on agricultural chemistry by Alexander—. E. O. VON LIPPMANN (Ab) ... 761
Von Libau bis Liebig: Chemikerköpfe und -Laboratorien. F. FERCHL (B) ... 789

Wallach. The life and work of Otto—. L. RUZICKA (Ab) ... 1304
Warburg. Nobel chemistry and medicine awards for 1931 to Bergius, Bosch, and—(CN) ... 173
Warburg. Otto—(P) ... 174
Warning follows fatal mistake of bichloride tablets for aspirin (CN) ... 778
Warns against radioactive waters and radium emanators (S) ... 154
Washington award to W. D. Coolidge. The—(CN) ... 955
Water molecules form clumps (S) ... 71
Water and air—*See*, Living in a world of science. M. MEISTER (B) ... 397
Water. Endless fight for—. J. F. GELDERS (Ab) ... 372
Water. Silver filter purifies—(CN) ... 779
Water. Taste in—(S) ... 343
Water. Testing the reaction of distilled—. E. TRUG (Ab) ... 756
Water in hydrated salts by means of the nickel-crucible radiator. The determination of—. W. M. THORNTON, JR., R. ROSEMAN, AND M. NEISHLOSS (Ar) ... 1645
Water purification aid textile industry. Improved methods of—. D. R. WEEDON (Ab) ... 569
Water, chemical and bacteriological. Examination of—. W. P. MASON (B) ... 399
Water gas, A simple set-up for making—, generator gas, and carbon monoxide. W. FLÖRKE (Ab) ... 1833
Water softeners, Comparative cost of soaps as—: a freshman experiment in chemistry. O. E. LOWMAN (Ar) ... 1809
Water softening in the Chicago district. Base exchange—. G. BORROWMAN (Ab) ... 569
Water-bath ring from glass (Ab) ... 565
Water vapor. Apparatus for the determination of the volume relationship in the synthesis of—. H. PETZOLD AND R. SCHARF (Ab) ... 1997
Wave mechanics, Why—? F. M. DENTON (Ab) ... 947
Weights and measures. Jefferson's efforts toward the decimalization of United States—. C. D. HELLMAN (Ab) ... 761
Weisbach. Albin—(P) ... 1616
Welsbach. Baron Auer von—(P) ... 1763
Wetherill. C. M.—(P) ... 719
What holds that nail? ANON. (Ab) ... 759
What is gas? F. P. STROUP (Ab) ... 370
What is science? D. E. PHILLIPS (Ab) ... 1308
What science really is. A. H. COMPTON (Ab) ... 573
What the chemist should know about patents. J. ROSSMAN (Ar) ... 486
When drugs were dregs (Ab) ... 167
Where are we going in our high schools? H. G. CAMPBELL (Ab) ... 1307

Where stainless alloys stand in chemical construction. E. C. WRIGHT AND K. E. LUGER (Ab) 2137
White iron hydroxide. E. H. F. MAGER (Ab) 158
Whiteness. Silicates and—. ANON. (Ab) 946
Who said "no more gold rushes?" O. H. KNEEN (Ab) 568
Why wave mechanics? F. M. DENTON (Ab) 947
Willstätter. The sixtieth birthday of Richard—. W. SCHLENK (Ab) 2002
Winkler. Clemens Alexander—(P) 1614
Winthrop. John—, the Younger—(P) 677, 864
Wistar. Caspar—(P) 682
Wöhler. Friedrich—(P) 1399, 1400, 1403
Wollaston. Wiliam Hyde—(P) 241, 1023
Women in Industry. M. E. PIDGEON (B) 605
Wonder book of rubber. A— (B) 1500
Wood. The relation of cellulose to lignin in—. K. FREUDENBERG (Ar) 1171
Woodhouse. James—(P) 684, 1748
Woodhouse, An early experiment of James—upon the synthetic production of ammonia. C. A. BROWNE (Ar) ... 1744
Woodhouse, Repetition of experiments reported by James—in 1808 relative to the production of ammonia. K. S. LOVE AND P. H. EMMETT (Ar) 1748
Wool and silk. Chemical constitution of—. C. E. MULLIN AND H. L. HUNTER (Ab) 570
Wool dyeing. Modern processes in—. G. WALLACE (Ab) 570
Work. A proposal for better coördination of school and college—. W. M. AIKIN (Ab) 1838
Workbook and laboratory guide. Chemistry—. M. V. MCGILL AND G. M. BRADBURY (B) 193
World-wide study of cosmic rays begun (CN) 954
Woulffe bottle. The—. R. WINDERLICH (Ab) 2141
Writing popular chemistry. W. DAVIS (Ar) 1874
Wurtz. Adolph—(P) 1606

Xenon—*See*, The discovery of the elements. XVIII. M. E. WEEKS (Ar) 2073
X-ray standard lessens danger of burns. U. S.— (CN) 181
X-ray tube equal of world's total radium. New super— (CN) 189
X-rays and its applications. Chemical analysis by—. G. VON HEVESY (B) .. 1841
X-rays in investigations of molecular structure. Recent applications of—. W. C. PIERCE (Ar) 845

Yale, Organic symposium at—, December 28–30, 1931 (CN) 175
Yarn industry during 1930, American synthetic—. C. E. MULLIN (Ab) ... 570
Yarns. Microanalysis of—. E. R. SCHWARZ (Ab) 567
Yearbook of the National Society for the Study of Education, The thirty-first—Part I. A program for teaching science. S. R. POWERS (B) 962
Young Harvard chemist gets Langmuir award (CN) 951
Ytterbia—*See*, The discovery of the elements. XVI. M. E. WEEKS (Ar) 1759, 1769
Yttria—*See*, The discovery of the elements. XVI. M. E. WEEKS (Ar) 1753, 1758
Yttrium. Some elements yielded by—. "A classic of science" (Ab) 370

Zinc—*See*, The discovery of the elements. III. M. E. WEEKS (Ar) 22
Zirconium—*See*, The discovery of the elements. XI. M. E. WEEKS (Ar) ... 1231
Zoochemie. Chemie und chemische technologie tierischer Stoffe: ein Einführung in die angewandte—. G. GRASSER (B) 199

74
06

73
81
89
41

45

75
70
67

062
051

769

758
870

22
231

199